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First report on the legal regime for allocation of loss in case of transboundary harm arising out of hazardous activities

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Introduction

1. The subject of international liability has been under consideration by the International Law Commission since 1978.[1] The Commission was able to complete a set of draft articles on the prevention of significant transboundary harm from hazardous activities in 2001. In considering those draft articles, the General Assembly of the United Nations felt that in order to fully discharge its mandate on the topic of international liability, the Commission should continue to deal with the topic of international liability.[2] In 2002, a working group of the Commission considered the matter in some depth and made some preliminary recommendations on the possible ways of making progress on the matter. It chiefly noted that, for the work to be profitable it should at the current stage proceed to develop a model of allocation of loss.[3]

2. The Commission's work on liability could not make rapid progress for a variety of reasons. For one thing, the subject of international liability does not lend itself easily to codification and progressive development. Experience also has shown that global and comprehensive liability regimes have failed to attract States.[4] Furthermore, the attempt to gain compensation for damage through the instrumentality of civil wrongs or the tort law of liability has its limitations.[5]

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[1] The matter was first raised in the Commission in 1973 and included in its work programme in 1977. See *Yearbook of the International Law Commission*, 1973, vol. II, document A/9010/Rev.1, paras. 38-39, and General Assembly resolution 32/151 of 19 December 1977 in which the Assembly invited the Commission to commence work at an appropriate time on the topic of international liability for injurious consequences arising out of acts not prohibited by international law.

[2] General Assembly resolution 56/82.

[3] *Official Records of the General Assembly, Fifty-seventh Session, Supplement No. 10* (A/57/10), paras. 430-457.

[4] The Council of Europe's 1993 Lugano Convention on Civil Liability for Damage resulting from Activities Dangerous to the Environment, which is the only existing horizontal international environmental regime, has so far not come into force. For the text, see *32 ILM.* (1993) 1228. Difficulties in reconciling its provisions with domestic laws and the unfinished deliberations within the European Commission over the general issue of liability and compensation for environmental harm are cited as the reasons for this. See Louise de La Fayette, "The Concept of Environmental Damage in International Law", in Michael Bowman and Alan Boyle, *Environmental Damage in International and Comparative Law: Problems of Definition and Valuation*, 2002, Oxford, 149-190. at p. 163 (fn.50). It is not likely, according to one assessment, to come into force in the near future. See the proposal for directive of the European Parliament and of the Council on environmental liability with regard to the prevention and remedying of environmental damage, European Communities document COM (2002) 17 final, 2002/0021(COD), Brussels, 23.1.2002 at p. 32. Co-decision reference No. 2002/0021/COD. Official Journal C 151 E, 25/06/2002 P.0132-0145, p. 17, at footnote 46 (cited hereafter as the Proposal). On the general view that global liability regimes have less chance of success, see A. Cassese, *International Law*, 2001, Oxford, 379-393.

[5] Brian Jones sounded the caution that "in our commendable and understandable general environmental zeal, we may all too easily lose sight of the fact that the rules of tortious civil liability are but one component of ... more general picture of environmental liability; and, in so doing, we may seek to make such civil liability rules perform functions for which they are not very well suited". The other components in the picture, he suggested, are liability under criminal law, liability to indemnify the governmental agencies for expenses incurred by such agencies in preventive or remedial work in relation to anticipated or actual harm, and liability to contribute joint contributory solutions. See Brian Jones, "Deterring, Compensating, and Remedying Environmental Damage: the Contribution of Tort Liability", in Peter Wetterstein (ed.), *Harm to*

Concepts of harm and damage are not uniformly defined and appreciated in national law and practice. Moreover, it is not easy in any system of law to establish a chain of causation and proof of failure or fault or both in the performance of a duty of care required in law in respect of wrongful conduct. And questions concerning proper adjudicatory forum, applicable law and recognition and enforcement of foreign judicial awards are acknowledged to be technically difficult.[6]

3. There are also other reasons. State liability and strict liability are not widely supported at the international level, nor is liability for any type of activity located within the territory of a State in the performance of which no State officials or agents are involved. Non-performance of duty of due diligence cast upon private citizens and individuals cannot easily be attributed to the State as a wrongful conduct justifying attachment of liability. International negotiations that attempted to develop some form of State liability, in the context of the international transport of hazardous wastes or in Antarctica, for example, have not succeeded in spite of several years of persistent efforts.[7] The case law on the subject is scant and the basis on which some claims of compensation between States were eventually settled is open to different interpretations. They do not lend strong support to the case of State liability. The role of customary international law in this respect is equally modest.[8]

4. It is worthwhile to examine how some of these problems and issues were handled by the Commission in its earlier phase of consideration of the topic on international liability. Such an examination might help in putting these issues and problems in a proper perspective for the purpose of the present exercise. We shall deal with some well-known and recent models of allocation of loss negotiated and agreed upon in respect of specific regions of the world or in respect of a specific sector of harm. Such an examination might throw some useful light on the model of allocation of loss the Commission may wish to recommend. Further, as several models of allocation of loss have also relied on civil liability, we will briefly touch upon the elements of that system also to see whether it would be feasible to integrate some or more of those elements into any model of allocation of loss.

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the Environment: The Right to Compensation and the Assessment of Damages, 1997, Oxford, 11-27, at p. 12. In a similar vein, Lucas Bergkamp noted, "Modern societies have high hopes for liability. It would compensate victims, secure environmental restoration, deter injuries and polluters, procure insurance, adjust activity levels to their optimal level, implement corrective and distributive justice, and correct problems of government failure in regulating and enforcing the law. Given its conceptual and institutional constraints, the liability system cannot meet these social goals". See Lucas Bergkamp, *Liability and Environment: Private and Public Law Aspects of Civil Liability for Environmental Harm in an International Context*, 2001, Kluwer, p. 366.

[6] See below for a treatment of this aspect.

[7] See below for a discussion on this matter.

[8] Ian Brownlie, "A Survey of International Customary Rules of Environmental Protection", *13 Natural Resources Journal* (1973), 179-189. On the point that the case law, treaty or State practice provides inconclusive evidence to support strict or absolute liability of States, see also Alan E. Boyle, "Nuclear Energy and International Law: An Environmental Perspective", *British Yearbook of International Law, vol. 60* (1990), 257-313, at pp. 292-296. Goldie and Schneider hold the view that strict liability was a principle of international law, and Jenks took the view that strict liability was justified in the case of ultra-hazardous activities. On the other hand, Dupuy, Handl, Smith and Hardy argued in favour of strict or absolute liability for ultra-hazardous activities, and in respect of other activities, liability only for failure to observe due diligence obligations. For a summary of these positions, see Boyle, op. cit., pp. 291-294 (fn.246). See also below footnote 49.

I. The International Law Commission and international liability

5. The topic of international liability for injurious consequences arising from acts not prohibited by international law was placed on the agenda of the Commission in 1978.[9] It was a logical consequence of a view taken by the Commission which concluded that "it fully recognizes the importance, not only of questions of responsibility for internationally wrongful acts, but also of questions concerning the obligations to make good any harmful consequences arising out of certain lawful activities, especially those which, because of their nature, present certain risks ... the latter category of questions cannot be treated jointly with the former".[10] Mr. Robert Ago, Special Rapporteur on State responsibility, described that the nature of issues falling under this latter category derived their legal basis from "responsibility for risk".[11]

A. Work of Special Rapporteurs Quentin-Baxter and Barboza

1. Approach of Quentin-Baxter: shared expectations and negotiated regime

6. Mr. Robert Q. Quentin-Baxter was appointed as the first Special Rapporteur to deal with the topic of international liability in 1978. In his view, the primary aim of the draft articles on that topic was "to promote the construction of regimes to regulate without recourse to prohibition, the conduct of any particular activity which is perceived to entail actual or potential dangers of a substantial nature and to have transnational effects".[12] In his view the term liability entailed "a negative asset, an obligation, in contradistinction to a right",[13] and accordingly it referred not only to the consequences of an obligation but also to the obligation itself, which, like responsibility, included its consequences. This topic thus viewed was to address primary obligations of States, while taking into consideration the existence and reconciliation of "legitimate interests and multiple factors".[14] Such an effort was further understood to include a duty to develop not only principles of prevention as part of a duty of due and reasonable care but also to provide for an adequate and accepted regime of compensation as a reflection of the application of equitable principles. He posited the whole scheme as a scheme of "shared expectations"[15] with "boundless choices" for States.[16]

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[9] Prior to that the United Nations General Assembly noted in 1973 the desirability of studying the injurious consequences of acts not treated as wrongful. This aspect came to light because of the decision of the Commission in 1970 to confine the study of the topic of State responsibility generated by a breach of an international obligation, and thus to the origin and consequence of the wrongful conduct of States.

[10] *Yearbook ... 1977*, vol. II (Part Two), document A/32/10, para. 17.

[11] Second report on State responsibility, *Yearbook ... 1970*, vol. II, p. 178, document A/CN.4/233, para. 6.

[12] Preliminary report, *Yearbook ... 1980*, vol. II (Part One), p. 247, document A/CN.4/334 and Add.1 and 2, p. 250, para. 9.

[13] Ibid, para. 12.

[14] Ibid., para. 38.

[15] The "shared expectations" are those that "(a) have been expressed in correspondence or other exchanges between the States concerned or, insofar as there are no such expressions, (b) can be implied from common legislative or other standards or patterns of conduct normally observed by

7. Quentin-Baxter submitted five reports. He developed during this period his conception of the topic into a schematic outline.[17] The main objective of the outline, according to him, was "to reflect and encourage the growing practice of States to regulate these matters in advance, so that precise rules of prohibition tailored to the needs of particular situations — including, if appropriate, precise rules of strict liability[18] — will take the place of general obligations treated in this topic".[19]

8. For balancing the multiple interests at stake, he suggested a three-stage procedure between the "source State" and an "affected State". First, the affected State was to have a right to be furnished with all relevant and available information. Secondly, an affected State "may propose to the acting State that a fact-finding be undertaken". Finally, States concerned were invited to settle their differences by negotiation. As to the legal significance of these procedural steps, Quentin-Baxter took the view that "failure to take any steps required by the rules shall not in itself give rise to any right of action". Further, on the question of reparation, he suggested that it be settled by negotiation on the basis of a set of factors for balancing the interests involved. In the absence of any agreement, the source State, according to Quentin-Baxter, was nevertheless liable to make reparation to the affected State in conformity with the shared expectations entertained by them.

9. The reaction of the General Assembly to the schematic outline was mostly positive. It was however noted that the outline should be reinforced to give better guarantees that the duties it envisaged would be discharged. There were also views in favour of separating issues of prevention from liability and others expressing doubts about the value or the viability of the topic itself.[20]

2. Treatment of liability by Barboza

(a) Place and value of procedural obligations

10. Mr. Julio Barboza was appointed as the Special Rapporteur in 1985 and followed the basic orientation developed by Quentin-Baxter. In the 12 reports that he submitted, he elaborated upon it by adding provisions on the scope, duty of

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the States concerned, or in any regional or other grouping to which they both belong, or in the international community". Schematic outline, sect. 4, para. 4. On the nature of the "shared expectations", Barboza explained that "they have a certain capacity to establish rights". "This falls within the purview of the principle of good faith, of estoppel, or what is known in some legal systems as the doctrine of 'one's own acts.'" See second report on the topic of international liability, *Yearbook ... 1986*, vol. II (Part One), document A/CN.4/402, para. 22.

[16] Preliminary report, *Yearbook ... 1980*, vol. II (Part One), document A/CN.4/334 and Add.1 and 2, para. 48.

[17] For the text of the schematic outline, see third report, *Yearbook* ... 1982, vol. II (Part One), p. 62, document A/CN.4/360, para. 53.

[18] On strict liability as an option, Quentin-Baxter noted that "at the very end of the day, when all the opportunities of regime-building have been set aside — or, alternatively, when a loss or injury has occurred that nobody foresaw — there is a commitment, in the nature of strict liability, to make good the loss". See his third report, *Yearbook ... 1982*, vol. II (Part One), document A/CN.4/360, para. 41. He considered, however, that there was a need to modify the rigours of strict liability to make it more acceptable. See his second report, *Yearbook ... 1981*, vol. II (Part One), document A/CN.4/346, Add.1 and 2, p. 123, para. 92.

[19] Fourth report, *Yearbook* ... 1983, vol. II (Part One), p. 216, document A/CN.4/373, p. 216, para. 50.

[20] Ibid., para. 10.

prevention, and notification.[21] One of the shortcomings of Quentin-Baxter's schematic outline, as noted above, was that it did not contain elements to secure implementation of the scheme.[22] Barboza suggested that the failure to take or comply with the procedural requirements of prevention could entail certain adverse procedural consequences for the acting or source State. Referring to section 5, paragraph 4, of the schematic outline, he noted that it would enable the affected State to have a liberal recourse to inferences of facts and circumstantial evidence to establish whether the activity did or might give rise to loss or injury. Furthermore, under due diligence obligations, the source State would be required to continuously monitor the activity, in addition to its duty to make reparation to any injury caused. On the whole, the scheme of implementation of the procedural obligations of prevention proposed by Barboza also very much hinged on reparation and liability, which came into play only after injury had occurred. In that event, the failure to comply with the procedural requirements of prevention would provide, according to that approach, aggravated legal and material consequences for the source State.[23]

(b) Negotiated regime of liability: an important option

11. Moreover, on the question of liability, like Quentin-Baxter, Barboza also relied on negotiation as a means to settle the matter of compensation between the concerned States.[24] Article 22 of the 1996 draft of the Working Group of the International Law Commission provided a list of factors which the States concerned could use to balance their interests in arriving at an agreement.[25] Negotiation of compensation, however, was not necessarily to be preferred over the method of resort to courts, which was also indicated in article 20. The commentary to article 21 envisaged situations in which such a resort to domestic courts could be unnecessary (if public and private claims overlapped) or difficult (due to conflict-of-law issues, inaccessibility of the forums available because of distance, lack of knowledge about the applicable law and problems of expenses) or ineffective (if remedies were not provided even for citizens for the harm involved), in which case negotiation would be the only way open or might prove to be more appropriate.[26]

(c) Factors relevant for negotiation

12. The various factors noted in article 22 were not exhaustive and were provided by way of guidance to parties to arrive at fair and equitable solutions with due regard to all relevant factors in the context. The point was made that specification of a list of factors, in the absence of a third party to settle differences which might arise

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[21] On the scope, requirements of prevention and notification, Barboza identified at least six elements: prior authorization, risk assessment, information and notification, consultation, unilateral preventive measures, and the standard of due diligence. For a summary, see P. S. Rao, First report on prevention of transboundary damage from hazardous activities, document A/CN.4/487, pp. 20-21, para. 55.

[22] For an analysis on this point, see Christian Tomuschat, "International Liability for Injurious Consequences Arising out of Acts not Prohibited by International Law: The Work of the International Law Commission", in Francesco Francioni and Tullio Scovazzi (eds.), *International Responsibility for Environmental Harm*, 1991, London, pp. 37-72, at p. 50.

[23] See P. S. Rao, First report on prevention, supra note 21, p. 19, para. 53.

[24] For the comments of Christian Tomuschat, see supra note 22, p. 51.

[25] *Yearbook ... 1996*, vol. II (Part Two), document A/51/10, annex I.

[26] Ibid., commentary to article 21. Incidentally, these are some of the reasons why States did not pursue claims in the case of the Chernobyl accident. See Alan E. Boyle, supra note 8, p. 296.

between concerned States, could work to the disadvantage of the weaker of the two and might undermine certainty of law.[27] Nevertheless, by way of some guidance,[28] it was noted that flagrant lack of care and concern for the safety and interests of other States would enhance the extent of liability and compensation payable by the source State. This would be particularly so when it had the knowledge of the risk the activity posed to them and the means to prevent or mitigate it. In contrast, the extent of its liability and compensation could be lower if it had taken all the preventive measures that it was required to take in deference to the duty of due diligence. Similarly, it would also be lower if the injury was unavoidable or could not be foreseen. So also, if the source State participated and cooperated in all possible measures of response and restoration after the injury occurred, it would get due credit. Equally, the share of the affected State in the benefits of the activity, its own ability to mitigate the effects of damage, and the promptness with which it took the necessary responsive measures could be factors in arriving at an agreed level of compensation. The standards of care and levels of compensation available in the jurisdiction of the affected State for the activity in question could also be relevant factors for fixation of liability and computation of compensation.

(d) Compensation: not so full and complete

13. Such a negotiated reparation or compensation should attempt an equitable settlement, keeping in view "the principle that the victim of harm should not be left to bear the entire loss". In other words, it need not be full and complete.[29]

14. Article 5 of the 1996 draft of the Working Group of the Commission endorsed this policy and stated that liability arises from significant transboundary harm caused by an activity referred to in article 1 and that will give rise to compensation and relief "in accordance with the present articles".

B. International liability regime: outstanding issues

15. Most of the points thus noted and incorporated in the proposals of the 1996 Working Group were generally acceptable. But there were differences in view on at least four important aspects of the matter. These were: (a) State liability, (b) scope of activities, (c) threshold of damage covered and (d) linkage between prevention and liability.

1. State liability: a case of misplaced emphasis

16. The Commission relied on State liability as a vehicle to move issues of liability and compensation for several reasons. First, as noted above, the whole issue

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[27] See Tomuschat, supra note 22, p. 50. Alan Boyle, "Codification of International Environmental Law and the International Law Commission: Injurious Consequences Revisited", in Alan Boyle and David Freestone, *International law and Sustainable Development*, 1999, Oxford, pp. 61-85, at p. 78.

[28] Commentary to article 22, supra note 25.

[29] Commentary to article 21, supra note 25. See also the second report of Barboza, where he noted that "it appears therefore that the negotiations may result in reparation, the amount of which may vary according to such factors as the nature of the injury, the nature of the activity in question and the preventive measures taken. Conceivably, the parties might agree that reparation should not be made because of exceptional circumstances that make it inappropriate", supra note 15, p. 149, para. 20.

came up for consideration within the Commission as an extension of its work on State responsibility. Secondly, it was felt that the *sic utere tuo* principle provided an adequate basis to develop State liability as a principle. Thirdly, it was also felt that such an approach would better serve the interests of innocent victims who would not have the means or accessibility to a distant and sometimes unknown foreign jurisdiction of the source State to seek necessary relief and remedies. Fourthly, for policy reasons it was felt that States should be encouraged to take the obligation *sic utere tuo* more seriously. Barboza noted that he believed that there were sufficient treaties and other forms of State practice to provide an appropriate conceptual basis for the topic. He agreed with some members of the Commission that the principle *sic utere tuo ut alienum non laedas* provided adequate conceptual foundations for the development of the topic.[30] He further noted that, while not denying the usefulness of existing private-law remedies for transboundary harm, they failed to guarantee prompt and effective compensation to innocent victims, who, after suffering serious injury, would have to pursue foreign entities in the courts of other States. In addition, private-law remedies by themselves would not encourage a State to take preventive measures in relation to activities conducted within its territory having potential transboundary injurious consequences.[31]

17. Separation of liability of States for harmful consequence of lawful — in the sense of not prohibited — activities from State responsibility for wrongful activities was criticized as flawed, misleading and confusing.[32] It was stated that such an attempted distinction tended to give the impression that there were lawful as opposed to unlawful and prohibited as opposed to unprohibited activities in international law, whereas in fact there were very few prohibited activities. The emphasis in law was always on prohibited consequences of acts or activities. Further, it was suggested that such a global distinction was not necessary and helpful for progressive development of the law of liability and compensation for transboundary damage. It was also pointed out that, in addition to other norms that might be developed, State responsibility could continue to provide a basis for State liability for the consequences of ultra-hazardous operations.[33]

18. In the absence of established, scientifically substantiated international standards for the determination of adverse transboundary effects in various spheres, it was argued that the elaboration of general principles could contribute to the emergence of disputes, while the lack of such standards would impede their settlement. It was feared that such an attempt would amount to absolute liability for non-prohibited activities and that would not be acceptable to States.[34] In response to

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[30] See *Yearbook ... 1987*, vol. II (Part Two), pp. 42-43, document A/42/10, para. 143.

[31] Ibid., p. 48, para. 181.

[32] See Ian Brownlie, *System of the Law of Nations: State Responsibility*, part I (1983), p. 50. Alan E. Boyle, "State responsibility and International liability for Injurious Consequences of Acts not prohibited by International Law: A Necessary Distinction?" *39 ICLQ*, (1990) 1-25. M. B. Akehurst, "International Liability for Injurious Consequences Arising out of Acts not Prohibited by International Law", *XVI Netherlands Yearbook of International Law* (1985) 3-16. For a more favourable view, see D. B. Magraw, "Transboundary Harm: The International Law Commission's Study of International Liability", 80 *AJIL* (1986) 305-330. There were other views justifying the distinction for the purpose of the study of the liability topic. For a discussion on this point and other citations, see P. S. Rao, Third report on prevention, A/CN.4/510.

[33] For a discussion on this matter, see P. S. Rao, Third report, paras. 27-30.

[34] Ibid., paras. 138-139. Tomuschat noted the same point when he wrote that "it is submitted that this global approach is not suited to yield constructive results. First, it can hardly be presumed

those concerns, Barboza decided to present a new scheme combining civil liability with State liability.[35] He explained that to "mitigate a situation which was both draconian and lacking in precedents",[36] he proposed to establish civil liability as a primary channel and supplement it with the liability of the State, or replace the liable private parties by State liability if the former could not be identified or located.[37] Several members of the Commission responded favourably to the new proposal to give priority to civil liability and assign residual liability to the State. There was however no agreement on the conditions under which such residual liability could be invoked.[38]

19. The Commission's approach to the principle of State liability, as may be noted, is centred on the liability of the State within the territory of which the hazardous activity is located. The concept of "control" and the test of "knowledge and means" noted in article 3 proposed by Barboza in his fourth and fifth reports did not affect that focus.[39] Both within the Commission and in some scholarly circles, it was pointed out that such focus was too limited and would not do justice to the interests and special circumstances of developing countries. There was a concern that the

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that States might be prepared to accept liability for any harm sustained by another State in the form of physical consequences of just any kind of activity carried out within their territory or under their control. By undertaking such a commitment, States would on their part accept uncontrollable risk ... A legal regime with unforeseeable consequences and heavy financial implications is (not acceptable to States by way of progressive development and hence) quite another matter. No responsible Government could commit itself for such an adventure". See Tomuschat, *supra* note 22, p. 55.

[35] Articles 21 and 28 in the sixth report of Barboza, *Yearbook ... 1990*, vol. II (Part One), document A/CN.4/428 and Add.1, chaps. IV and V, pp. 94-100.

[36] Seventh report of Barboza, *Yearbook ... 1991*, vol. II (Part One), document A/CN.4/437, p. 84, para. 48.

[37] Ibid., para. 50.

[38] The question of strict State liability was particularly discussed at the forty-third session of the International Law Commission in 1991. See summary record of the 2222nd to 2228th meetings, *Yearbook ... 1991*, vol. I. Several members who spoke on the subject expressed their doubts about the reception of that obligation in international law. They also were doubtful of the willingness of States to accept it even as a measure of progressive development of international law. Most favoured primary civil liability of the operator and residual State liability under some conditions (there was no common position on these conditions). See the opinions of Jacovides (ibid., 2222nd mtg., para. 6), Mahiou (ibid., para. 18), Francis (ibid., 2223rd mtg., para. 10), Calero (ibid., para. 25), Pellet (ibid., para. 41), Bennouna (ibid., 2224th mtg., para. 5), Tomuschat (ibid., para. 12), Njenga (ibid., para. 26), Graefrath (ibid., para. 31), Ogiso (ibid., 2225th mtg., para. 15), Shi (ibid., para. 27), Rao (ibid., paras. 32 and 34), Pawlak (ibid., 2226th mtg., para. 4) and McCaffrey (ibid., 2227th mtg., para. 7). Arangio-Ruiz distinguished three types of harm: dangerous or hazardous activities, operator liability only if there is failure of performance of due diligence obligations; ultra-hazardous activities, strict liability of the operator; and where the author of the harm cannot be identified (ibid., paras. 14-17). Barsegov preferred the civil liability of the operator, leaving State liability to be part of State responsibility (ibid., 2226th mtg., para. 40). Al-Khasawneh had no strong feelings on the point (ibid., para. 21). Hayes would like to keep the option open to the State (ibid., 2225th mtg., para. 64). Thiam did not have an objection if State liability was to be residual (ibid., para. 50), and Koroma would prefer State liability (ibid., 2222nd mtg., para. 31). Barboza summed up to note that the Commission was virtually in agreement that civil liability should take priority and that State liability should be residual (ibid., 2228th mtg., para. 25).

[39] See, for example, articles 1 and 3 proposed by Barboza in his fourth and fifth reports. By the time the twelfth report had been submitted these articles had been placed within squared brackets. See A/CN.4/475/Add.1.

multinational enterprises lacked any duty to notify to the developing countries all the risks involved in the export of hazardous technology. They also owed no duty to them to manage those operations with the same standards of safety and accountability as were applicable in the country of the nationality of the multinational enterprises. Furthermore, the developing countries lacked both the knowledge of the risks involved and the ability, with their limited resources, to monitor the hazardous operations of multinational enterprises within their territory. Under the circumstances, it was argued, a duty might be placed on the State of nationality of the multinational enterprises to ensure that such export of hazardous technology to the developing countries conformed to international standards. Moreover, it was stressed that that State should also accept a share in the allocation of loss resulting from any accident causing transboundary harm.[40] But this aspect of the matter did not find much echo in the debates of the Commission, and the 1996 Working Group did not touch upon it.[41]

2. Strict or absolute liability: a necessary legal basis for an international regime?

20. The approach of Quentin-Baxter only glanced at strict liability as an option or a possibility but actually laid emphasis on negotiation between the source State and the affected State(s) for balancing the interests and equities in arriving at a settlement on liability and compensation.[42] Barboza initially explored the possibility of developing the strict liability option more fully but eventually preferred that those issues as well as possible claims under civil liability of the operator and others should be settled through resort to domestic legal action. Endorsing that approach, the Working Group of the Commission in 1996 noted that the articles on compensation and relief it recommended "do not follow the principle of 'strict' or 'absolute' liability as commonly known".[43] It added,

> "As in domestic law, the principle of justice and fairness as well as other social policies indicate that those who have suffered harm because of the activities of others should be compensated ... Thus chapter III provides two procedures through which injured parties may seek remedies: pursuing claims in the courts of the State of origin or through negotiations between the State of origin and the affected State or States. These two procedures are, of course, without

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[40] For the views of Shi (on difficulties faced by the developing countries), Rao, and Pawlak (on the need to develop a multinational enterprise liability), in the debates of the Commission, see Summary records of the 2225th meeting, 18 June 1991, *Yearbook ... 1991*, Vol. I, p. 117, para. 29, p. 118, para. 3, and p. 122, para. 5. See also Francesco Francioni, "Exporting Environmental Hazard through Multinational Enterprises: Can the State of Origin be Held Responsible?", in Francesco Francioni and Tullio Scovazzi, (eds.), *supra* note, 22, pp. 275-298.

[41] For the report of the Working Group of 1996, see supra note 25.

[42] Barboza explained this well. He noted that, "with regard to 'strict' liability, previous reports made a considerable effort, first ... to minimize its effects, and secondly, to consider it as only one of several factors which provide legal justification for any reparation made in cases of injury occurring in the absence of a treaty regime ... This second component would derive, perhaps, from the 'quasi-contractual' nature of shared expectations. ... As the previous Special Rapporteur stated in his third report, 'At the end of the day, when all the opportunities of regime-building have been set aside — or, alternatively, when a loss or injury has occurred that nobody foresaw — there is a commitment, in the nature of strict liability, to make good the loss ...'". Second report, *Yearbook ... 1986*, vol. II (Part One), document A/CN.4/402, p. 155, paras. 46 and 47.

[43] Report of the Working Group, 1996, *supra* note. 25, chap. III, Compensation and other relief, para. (1) of the general commentary.

prejudice to any other arrangements on which the parties may have agreed, or to the due exercise of the jurisdiction of the courts of the States where the injury occurred. The latter jurisdiction may exist in accordance with applicable principles of private international law: if it exists, it is not affected by the present articles."[44]

21. This 1996 approach to separate the issues of liability and compensation from both the fields of torts or civil wrongs and private international law has its merits. In attempting to bring the concerned States together, the approach facilitated matters of relief and compensation to innocent victims to be settled early without lengthy court proceedings concerning conflicts in jurisdiction, applicable law and fixation of shares of liability among different actors involved and finally recognition and enforcement of awards made. It is equally meritorious in not pre-empting legal action on other applicable grounds.

22. The hesitation to peg State liability to strict liability is also understandable. It is mainly due to an assessment that in international practice, as between States, that form of liability is not accepted for activities that are considered as lawful to pursue in their domestic jurisdiction in accordance with their sovereign rights. On strict or absolute liability the 1996 Working Group of the ILC noted that:

"As a matter of general application, a rule of strict liability for all and any losses covered by activities lawfully carried out on the territory of a State or under its jurisdiction or control would be difficult, if not impossible, to sustain. Of course, a treaty may incorporate such a rule, but that does not necessarily show what the rule of general international law would be apart from the treaty."[45]

23. It further noted that concepts of strict or absolute liability which

"are familiar and developed in the domestic law in many States and in relation to certain activities in international law ... have not been fully developed in international law, in respect to a large group of activities such as those covered by article 1."[46]

24. Moreover, after surveying a number of incidents in which States, without admitting any liability, paid compensation to victims of significant transboundary harm, the Commission came to the conclusion that "the trend of requiring compensation is pragmatic rather than grounded in a consistent concept of liability."[47]

25. Several commentators shared the view of the 1996 Working Group of the Commission. Tomuschat felt that a general regime of strict or objective liability was established by treaty only for ultra-hazardous activities. Boyle noted that the "difficulty with the strict liability as a principle of international law is that although

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[44] Ibid.

[45] Ibid., chap. I, General provisions, para. (3) of the commentary to article 5, referring to some international treaties and other State practice adopting strict or absolute liability as legal basis for compensation.

[46] Ibid., para. (1) of the general commentary to chapter III. In arriving at this conclusion, the Working Group had the benefit of the "Survey of liability regimes relevant to the topic of international liability for injurious consequences arising out of acts not prohibited by international law", prepared by the Secretariat, *Yearbook ... 1995*, vol. II (Part One), document A/CN.4/471.

[47] Ibid., para. (32) of the commentary to article 5.

some commentators argue that it is a general principle of law applicable to ultra-hazardous activities,[48] there is little consistent evidence of supporting State practice in favour of this view".[49] Further, according to him,

> "[the] clear preference of treaty formulations, such as the 1982 Law of the Sea Convention, is, at most, for the imposition of responsibility only in cases of a breach of international obligations, defined in terms of diligent control of sources of environmental harm.[50] Examples of direct and absolute State responsibility for damage, such as the Space Objects Liability Convention, remain exceptional. States have instead de-emphasized their own responsibility for pollution damage. Indeed many modern regulatory treaties, such as the 1979 Geneva Convention on Long-Range Transboundary Air Pollution, either ignore the issue altogether, or leave it to further development".[51]

3. Scope of activities to be covered

26. With respect to the scope of the activities, there are two issues: one relating to the type of activities covered and the other related to criteria to delimit the transboundary element. Quentin-Baxter conceived a wide variety of "activities and situations" to come within the scope of activities, including dangers such as air pollution that were insidious and might have massive cumulative effects.[52] Barboza accepted the wide scope but did not think reference to "situations"[53] in addition to "activities" was useful. A question also arose about the desirability of specifying in a list activities covered by the draft articles. A working group of the Commission

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[48] See Wilfred Jenks, "Liability for Ultra-hazardous Activities in International Law", *RdC* (1966), 1, p. 105. B. Smith, *State responsibility and the Marine Environment* (1988), p. 128.

[49] On State claims in case of nuclear injury, see Alan Boyle, *supra* note 8. On the Chernobyl accident, see P. Sands, *Chernobyl: Law and Communication* (1988), 226 and 227, and Alan Boyle, in Butler (ed.), *Perestroika and International Law* (1990) 203.

[50] Examples cited are 1979 Long Range Trans-boundary Air Pollution Convention, article 2; 1972 London Dumping Convention, articles II, IV; 1974 Paris Convention on the Prevention of Marine Pollution from Land-based Sources, article 1; 1985 Vienna Convention for the Protection of the Ozone Layer, article 2; and 1982 United Nations Convention on the Law of the Sea, articles 194, 207-212.

[51] Alan E. Boyle, "Making the Polluter Pay? Alternatives to State Responsibility in the Allocation of Transboundary Environmental Costs", in F. Francioni and T. Scovazzi (eds.), *supra* note. 22, pp. 363-379, at pp. 365-366.

[52] The following were mentioned: "Use and regulation of rivers crossing or forming an international boundary and avoidance of damage from floods and ice; use of land in frontier areas; spread, across national boundaries, of fire or any explosive force, or of human, animal or plant disease; activities which may give rise to transboundary pollution of freshwater, of coastal waters or of national airspace, or to pollution of the shared human environment, including the oceans and outer space; development and use of nuclear energy, including the operation of nuclear installations and nuclear ships and the carriage of nuclear materials; weather modification activities; overflight of aircraft and space objects involving a risk of accidental damage on the surface of the earth in airspace or in outer space; and activities physically affecting common areas or natural resources in which other States have rights or interests". Fourth report, *Yearbook ... 1983*, vol. II (Part One), p. 201, document A/CN.4/373 at p. 202 (footnote 8).

[53] "Situations" are defined as "a state of affairs, within the territory or control of the source State, which does or may give rise to physical consequences with transboundary effects", and examples given are an approaching oil slick, danger from floods, or drifting ice, or risks arising from an outbreak of fire, pests or disease. Fifth report, *Yearbook ... 1984*, vol. II (Part One), p. 155, document A/CN.4/383 and Add.1, at p. 166 and para. 31.

considered the matter in 1995 and recommended that for the purpose of the study no list was necessary at that time and that the activities mentioned in some Conventions dealing with transboundary issues should be considered as relevant.[54] Accepting that recommendation, the 1996 Working Group of the Commission further defined the concept of risk, central to the scope of activities, reiterating the definition provisionally adopted by the Commission in 1994, to mean activities with "a low probability of causing disastrous harm and high probability of causing other significant harm" (article 2 (a)).

27. To delimit the wide scope, however, both Special Rapporteurs relied on three criteria that defined "transboundary damage". The activities must take place in the territory or control or jurisdiction of the source State. They must have a risk of causing significant transboundary harm. Finally, such a harm must have been caused by the "physical consequences" of such activities or must be determinable by clear direct physical effect and causal connection between the activity in question and harm or injury suffered. Such a delimitation would, for example, exclude from the scope of the articles harm to the global commons, which are beyond any national jurisdiction; or damage to the environment not within national jurisdiction; or air pollution and creeping pollution not attributable to any one source; as well as economic consequences arising from policies and decisions of one State over the other.

28. The Working Group in 1996 considered these matters once again but was reluctant to expand the scope and approved the criteria as noted above to delimit the scope. As one commentator observed, this moderation was necessary to make the work of the Commission on this difficult topic acceptable to most States.[55] Another comment which lamented the lack of progress on the work of liability for transboundary harm appeared to endorse a more pragmatic limitation on the scope of the draft articles, when it recommended "promulgation of an international liability regime that so advances the interest of States that nations will surrender some of their sovereign rights to participate in the system".[56]

4. Threshold of damage: significant harm as a necessary criterion

29. With regard to the threshold of damage covered, the problem was one of designating the level of harm that is considered unacceptable and hence would merit remedial action, including appropriate compensation. For Quentin-Baxter not every transboundary harm was wrongful.[57] He therefore mentioned "the seriousness" of the loss or injury as one of the factors to be included in the balancing-test he had

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[54] These conventions are: 1991 Convention on Environmental Impact Assessment in a Transboundary Context; 1992 Convention on Transboundary Effects of Industrial Accidents; and 1993 Convention on Civil Liability for Damage Resulting from Activities Dangerous to the Environment.

[55] Daniel B. Magraw, "Transboundary Harm: The International Law Commission's Study of International Liability", *80 AJIL* (1986), 305-330, where he observed, at p. 322, that the "key will be to define the scope of the topic in a sufficiently modest manner so as not to invite non-compliance".

[56] See the comment of the editors of the *Harvard Law Review*, "Trends in International Environmental Law", reproduced in L. D. Guruswamy, Sir G. W. Palmer and B. H. Weston, *International Environmental Law and World Public Order: A Problem-Oriented Course Book* (1994), pp. 330-332.

[57] See Barboza, Second report, *Yearbook ... 1986*, vol. II (Part One), p. 145, document A/CN.4/402.

suggested (section 6, paragraph 2, of the schematic outline). Barboza concurred but believed that the concept of risk was relative and could vary according to a number of factors. He thought the matter was best suited for settlement among States when they negotiated a regime applicable to specific activities posing a risk of transboundary harm.[58]

30. The matter required further examination because of persistent differences in views among members of the Commission and among States. The 1996 Working Group of the Commission took the view that:

> "it is legitimate to induce from the rather diverse practice surveyed ... the recognition — albeit on some occasions *de lege ferenda* — of a principle that liability should flow from the occurrence of **significant** transboundary harm arising from activities such as those referred to in article 1, even though the activities themselves are not prohibited under international law — and are therefore not subject to the obligation of cessation or *restitutio in integrum*.[59] (emphasis added)

31. This was clarified to mean something that was not *de minimis* or not negligible but more than "detectable" and "appreciable" and need not be at the level of "serious" or "substantial". Further, the harm must lead to real detrimental effects on such aspects as human health, industry, property, the environment or agriculture in other States which could be measured by factual and objective standards.[60]

32. While the above recommendations of the 1996 Working Group and their main thrust could be regarded as a positive contribution,[61] they could not be endorsed by

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[58] See *Yearbook ... 1987*, vol. II (Part Two), chap. IV, para. 127.

[59] Report of the 1996 Working Group, *supra* note 25, para. (32) of the commentary to article 5. The conclusion that activities which gave rise to liability need not be subject to obligations of cessation or *restitutio in integrum* is considered to be important "in those cases where the harm cannot reasonably be avoided, since otherwise such activities would have to be closed down". At the same time it was felt that there was no need for the Working Group to arrive at this conclusion on the basis of a distinction made on the nature of the activities involved as "not prohibited" or "prohibited" activities. It was pointed out that even under State responsibility, cessation of the activity itself would not be required if what gave rise to that responsibility was the wrongful consequences of the activity, as was the case in the *Trial Smelter* case. Alan Boyle, *supra* note 27, pp. 77-78.

[60] Ibid., paras. (4) and (5) of the commentary to article 2, paras. 4 and 5. Sands observed that "State practice, decisions of international tribunals and the writings of jurists suggest that environmental damage must be 'significant' or 'substantial' (or possibly 'appreciable', which suggests a marginally less onerous threshold) for liability". P. Sands, *Principles of International Environmental Law*, vol. I, 1995, Manchester, p. 635. Referring to the exchange between the President of the ICJ, Sir Humphrey Waldock, and the Government of Australia in the *Nuclear Test Cases*, he noted, at p. 246, that, while a nominal harm or damage caused by activities conducted for community benefit did not give rise to liability, significant harm or damage caused even by such activities did.

[61] According to one comment, the main thrust of the Commission's recommendation is to secure the approval of the international community for the proposition that "States do have the sovereign right to pursue activities in their own territory even where they cause unavoidable harm to other States (except in the case of those few activities which by agreement or under some other rule of law are not permitted) provided they pay equitable compensation for the harm done". "If the Commission can secure international support for this proposition", it added, "it will have achieved a significant advance and will have provided a useful element of flexibility in the wider balancing of interests which the articles as a whole seek to establish in transboundary relations", Boyle, *supra* note 27, at p. 78.

the Commission in 1996 both for lack of time and, more significantly, for lack of agreement on other issues, such as the emphasis on State liability and the treatment of prevention as part of a regime of liability.

5. Prevention and liability: distinct but related concepts

33. On the question of the linkage between prevention and liability, a working group of the Commission established in 1997 reviewed the work on the topic since 1978. It felt that "the scope and content of the topic remained unclear due to such factors as conceptual and theoretical difficulties, appropriateness of the title and the relation of the subject to the topic of 'State responsibility'".[62] It further observed that aspects of prevention and liability "are distinct from one another, though related".[63] It was recommended that they be studied separately. On the study of the question of liability, the Working Group was of the view that it could await further comments from States. However, the title of the topic would need to be adjusted depending upon the scope and contents of the draft articles.[64]

34. The Commission endorsed these recommendations in 1997 and appointed a new Special Rapporteur for the sub-topic of prevention of transboundary damage from hazardous activities.

35. In 1998, on the basis of proposals made by the Special Rapporteur, and after further consideration of the regime of prevention, the Commission took decisions on the scope of the draft articles, including on the question of threshold of harm that would fall within the scope of the draft articles. First, the articles would deal only with activities posing a *risk* of transboundary harm. Secondly, the risk of significant harm should be prevented. Thirdly, the harm must be a transboundary one with physical consequences. Thus, the draft articles would not deal with creeping pollution, pollution from multiple sources and harm the global commons. Fourthly, the definition of harm adopted would cover damage to persons or property or to the environment within the jurisdiction and control of the affected State. It was readily admitted that the activities or other types of harm not brought within the scope were equally important, but because they encompassed a different set of considerations, it was desirable to study them under a fresh mandate from the General Assembly.

36. The reaction of the General Assembly to the proposals of the Commission on the subject of prevention was favourable. A sizeable section of members of the Assembly continued to insist that the main raison d'être of the topic assigned for study was liability and that its study should be also completed without delay after the completion of the draft articles on prevention. This demand was repeated in 2001 when the Commission completed the second reading of the draft articles on prevention, at which time the Assembly took note of the draft articles on prevention and urged the Commission to promptly proceed to the study of liability, bearing in mind the interrelationship between prevention and liability, and taking into account the developments in international law and comments by Governments.

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[62] For the report of 1997 Working Group, see *Yearbook ... 1997*, vol. II (Part Two), document A/52/10, chap. VII, para. 165.

[63] Ibid.

[64] Ibid., para. 167.

6. Further work on liability: focus on models for allocation of loss

37. At the fifty-fourth session of the Commission in 2002, a working group was established to consider possible approaches to the study of the topic of liability. It recommended that the Commission should:[65]

(a) Concentrate on harm caused for a variety of reasons but not involving State responsibility;

(b) Better deal with the topic as allocation of loss among different actors involved in the operations of the hazardous activities, such as, for instance, those authorizing, managing or benefiting from them;

(c) Limit the scope of the topic to the same activities which are covered by the regime of prevention adopted by the Commission in 2001;[66]

(d) Cover within the scope of the topic loss to persons, property, including the elements of State patrimony and natural heritage, and the environment within national jurisdiction.

38. The focus on allocation of loss instead of the development of an international liability regime is well in tune with the emerging thinking on the subject which is focused on facilitating a more equitable and expeditious scheme of compensation to the victims of transboundary harm. Given the difficulties and constraints of traditional tort law or civil liability regimes, the 1996 Working Group of the Commission had already set in motion a more flexible approach, divorced from private law remedies or from strict or absolute liability as a basis for the compensation scheme proposed. The thinking of legal and policy experts concerned with transboundary harm has also been oriented for some time on the development of suitable loss allocation schemes with a view to promoting a more equitable spreading of loss and enhancing the speedy and sufficient redress of the grievances of victims.

39. It was also suggested that the Commission might examine the threshold necessary for triggering the application of the regime on allocation of loss caused. Two views could be noted in this regard. One view advocated the retention of "significant harm" as the trigger, while another favoured a higher threshold than that prescribed for the application of the regime on prevention. In contrast, it was also suggested that there should be a lesser threshold than "significant harm" for dealing with liability and hence compensation claims.[67] Generally in the context of liability as in the case of prevention the need for a threshold of harm for triggering claims of compensation is emphasized. If the *Trail Smelter* or the *Lac Lanoux* cases are of any guidance, it is clear that a threshold of harm that is "appreciable" or "serious" or "significant" or "substantial" is what qualifies for compensation and not the negligible or *de minimis* damage. On the basis of a review of the consideration of the matter within the Commission, it is clear that in the debate on the scope of the draft articles, the designation of the threshold of harm and the definition of harm, no distinction was drawn between prevention on the one hand and liability and compensation, on the other. Accordingly, it appears reasonable not to reopen this

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[65] For the report of the Working Group, see *Official Records of the General Assembly, Fifty-seventh Session, Supplement 10* (A/57/10), chap. VII.

[66] For the reasons to limit the scope of the topic, see first report of P. S. Rao on prevention of transboundary damage from hazardous activities, A/CN.4/487, paras. 71-86, and 111-113 (particularly the recommendations in para. 111 (a), (b), (c), (f) and (g)).

[67] Uruguay, A/C.6/57/SR.24, para. 41.

debate and to endorse the earlier decision of the Commission to designate "significant harm" as the threshold for the obligation of compensation to come into play.

40. The recommendation of the 2002 Working Group that the definition of harm may also cover the national patrimony and heritage as part of loss of property is worthy of support. The definition of damage or harm considered by the Commission only referred to loss of persons and property and environment within national jurisdiction. There was some doubt at that time about the best possible way to cover the damage to the national patrimony and heritage. Barboza, in his eleventh report, recommended that harm to the cultural heritage as a category of damage was better considered together with loss of property.

41. In his view, damage to environment should encompass damage to the natural elements or components of environment and loss or diminution of environmental values caused by the deterioration or destruction of such components. Further, damage to environment per se, but within the jurisdiction and control of a State, should be covered within the definition of environmental harm, as it affected the whole community of people. But in that case it was the State as a whole which was the injured party. Such an approach would still exclude harm or damage to environment per se of global commons, that is, areas not within the jurisdiction or control of any State. The contemporary trends we review below appeared to have provided some basis for this recommendation.[68]

42. Before we proceed to review in some detail various models on allocation of loss among different actors for the purpose of evaluating contemporary trends in establishing models of loss allocation, it would be opportune to recollect some of the policies that guided those trends.

C. Some policy considerations

43. The 1996 Working Group of the Commission noted that the principle of liability should be based on certain broad policy considerations: (a) each State must have as much freedom of choice within its territory as is compatible with the rights

[68] For the views of Barboza, see "The ILC and Environmental Damage", in Peter Wetterstein (ed.), *supra* note 1, pp. 73-81, at p. 76, 78. See also his eleventh report, A/CN.4/468. The definition of harm proposed by the Special Rapporteur was discussed in a preliminary way in 1995. "It was stated that the definition of harm must be reasonably comprehensive without being overburdened with detail. In a preliminary stage, it ought to cover the following elements: loss of life, personal injury or other impairment of health, loss or damage to property within the affected State, as well as impairment of the natural resources and human and cultural environment of that affected State." See *Yearbook ... 1995*, vol. II (Part Two), document A/50/10, chap. V.B.3, para. 397. On the question whether harm, to be eligible for compensation, should only be direct or at least be not remote, a preliminary view was in favour of including such a criterion. Further, there was some emphasis that the primary purpose of compensation was to restore the status quo ante. Ibid., para. 402. For the view that damage to cultural heritage may be included in the definition of damage to environment, see the definition adopted by the working group of the United Nations Environment Programme (UNEP) cited in M. A. Fitzmaurice, "International Protection of the Environment", *RdC* (2001), p. 228. The author also cited the view of the Commission, which it expressed while considering the question of State responsibility for harm, that no test for remoteness of damage should be included in the draft articles: "As with national law, it seems likely that different tests for remoteness may be appropriate for different obligations or in different contexts, having regard to the interests sought to be protected by the primary rule". Ibid., p. 232.

and interests of other States; (b) the protection of such rights and interests requires the adoption of measures of prevention and, if injury nevertheless occurs, measures of reparation; and (c) insofar as may be consistent with those two principles, the innocent victim should not be left to bear his or her loss or injury.[69] It may be recalled that the draft regime adopted on prevention in 2001 already reflected the policy objectives noted in point (a) and partially those in point (b). The present effort of the Commission therefore should be directed more towards realizing the remaining parts of the policy, that is, towards encouraging States to conclude international agreements and adopt suitable legislation and implementing mechanisms for prompt and effective remedial measures including compensation in case of significant transboundary harm.

44. It may be noted that there is general support for the proposition that any regime of liability and compensation should aim at ensuring that the innocent victim is not as far as possible left to bear the loss resulting from transboundary harm arising from hazardous activity. However, it is realized that full and complete compensation may not be possible in every case. The definition of damage, sometimes a lack of the required proof of loss and applicable law, in addition to the limitations of the operator's liability and limitations within which contributory and supplementary funding mechanisms operate would militate against the possibility of obtaining such full and complete compensation. Where mass tort claims are involved, lump-sum compensation is generally paid, which will always account for less than full and complete payment.

45. In any case the function of any regime of allocation of loss should be to provide an incentive for those concerned with the hazardous operations to take preventive or protective measures in order to avoid damage; to compensate damage caused to any victim; and to serve an economic function, that is, internalize all the costs (externalities).[70] In fact these functions are mutually interactive. In the context of the development of a policy concerning environmental liability at the level of the European Commission, it is noted that "prevention and remedying of environmental damage should be implemented through the furtherance of the principle according to which the polluter should pay ... One of the fundamental principles ... should therefore be that an operator whose activity has caused the environmental damage or the imminent threat of such damage will be held financially liable in order to induce operators to adopt measures and develop practices to minimize the risks of environmental damage so that their exposure to financial liabilities is reduced."[71] In addition, issues of harmonization of the law of compensation would appear to be of interest. As has been noted, "harmonization can be a means of avoiding conflict-of-laws problems and contributes to the creation of certain shared expectations on a regional basis."[72] Further, such a harmonization could help in "the reduction of unpredictability, complexity, and cost"[73] and balance the "interests of plaintiffs in the widest possible choice of law and jurisdiction against the interests of the defendants in ordering their affairs in an environmentally responsible manner."[74]

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[69] Report of the Working Group, 1996, *supra* note 25, commentary to article 5.

[70] Louise de La Fayette, see *supra* note 4, at p. 179.

[71] For the text of the proposal, *supra* note 4.

[72] Birnie and Boyle, *International Law and the Environment*, 2002, Oxford, pp. 279-280.

[73] Ibid.

[74] Ibid.

46. During the past few years, keeping some or all of these policies in view, the liability provisions of earlier oil pollution and nuclear accident conventions have been strengthened. New treaties or protocols on liability for hazardous and noxious substances and wastes have been adopted. There have been negotiations for a liability Protocol to the Antarctica Convention. Attempts have also been made to reach international agreement on civil liability for other potential hazards such as genetically modified organisms. From the records of these negotiations it is instructive to note that States have attempted to settle the issue of allocation of loss in most of the recently concluded treaties by relying upon civil liability. They thus established "the direct accountability of the polluter in national law as the best means of facilitating recovery of compensation, without having to resort to inter-State claims or the complexities of the law of State responsibility"[75]. These treaties also indicate that there could be no single pattern of allocation of loss.

II. Allocation of loss

A. A sectoral and regional analysis

1. Convention on Oil Pollution Damage, 1969, and International Fund Convention, 1971, and Protocols thereto of 1992

47. The International Convention on Civil Liability for Oil Pollution Damage (CLC), 1969,[76] as amended by additional Protocols in 1976, 1984 and 1992, and the International Convention on the Establishment of an International Fund for the Compensation for Oil Pollution Damage (the Fund Convention), 1971,[77] with additional Protocols in 1976, 1984,[78] and 1992,[79] deal with the civil liability for oil pollution damage caused by ships.[80] These are conventions concluded under the auspices of the International Maritime Organization (IMO). The CLC (1992) provides for strict but limited liability of the shipowner for pollution damage resulting from the escape or discharge of oil from a seagoing vessel actually carrying oil in bulk as cargo. They also provide for a limited number of exceptions

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[75] Ibid, p. 281.

[76] For the text see United Nations, *Treaty Series*, vol. 973, p. 3. The CLC entered into force on 19 June 1975.

[77] For the text, see 11 *ILM* (1972) 284. The Fund Convention entered into force on 16 October 1978.

[78] The 1984 modifications never came into force.

[79] For the texts of the Protocols along with the 1992 Convention on Civil Liability for Oil Pollution Damage and the 1992 Convention on the Establishment of an International Fund for Oil Pollution Damage, see Birnie and Boyle, *Basic Documents on International Law and the Environment* (1995), Oxford. Both the Protocols entered into force on 30 May 1996.

[80] In addition to these Conventions, two private agreements, one entered into among shipowners, the Tanker Owners Voluntary Agreement Concerning Liability for Oil Pollution (TOVALOP) and another entered into among oil companies, the Contract Regarding an Interim Supplement to Tanker Liability for Oil Pollution (CRISTAL), institute a "voluntary" system intended to indemnify the victims of pollution, in particular the Governments which carry out actions for prevention or for rescue. These constitute an inseparable element of the system of indemnification. On TOVALOP and CRISTAL, see I. C. White, "The Voluntary Oil Spill Compensation Agreements — TOVALOP and CRISTAL", in Colin M. De La Rue (Ed), *Liability for Damage to the Environment* (1993), 57-69.

which when present would exempt the shipowner from the payment of any compensation.[81]

48. Parties to the CLC recognized that the shipowner might not be able in every case of oil pollution damage to meet all the claims of compensation either because his funds were limited or because owing to certain exemptions he was not liable to pay compensation or because the amount of damage claimed exceeded the limit of his liability. For that reason, IMO members in 1971 adopted the Fund Convention to provide supplementary compensation to claimants unable to obtain full compensation under the CLC. Contributions to the International Oil Pollution Compensation (IOPC) Fund come from a levy on oil importers which are mainly companies receiving oil transported by sea into the territories of the States parties.

49. Under the 1992 Protocols, the shipowner's maximum limit of liability is 59.7 million Special Drawing Rights; thereafter the IOPC is liable to compensate for further damage up to a total of 135 million SDRs (including the amounts received from the owner), or in the case of damage resulting from natural phenomena, 200 million SDRs.[82]

50. The Convention defines "pollution damage", which, includes the costs of preventive measures and further loss, or damage caused by preventive measures.[83]

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[81] Article III (2) to CLC provides for no liability of the owner if he proves that the damage:
(a) Resulted from an act of war, hostilities, civil war, insurrection or a natural phenomena of an exceptional, inevitable and irresistible character,
(b) Was wholly caused by an act or omission done with the intent to cause damage by a third party, or
(c) Was wholly caused by the negligence or other wrongful act of any Government or other authority responsible for the maintenance of lights or other navigational aids in the exercise of that function.
Furthermore, article III (3) states that "if the owner proves that the pollution damage resulted wholly or partially either from an act or omission done with intent to cause damage by the person who suffered the damage or from the negligence of that person, the owner may be exonerated wholly or partially from his liability to such person". Conversely, according to article V (2), the owner cannot claim any limit to his liability as prescribed by the Protocol, "if it is proved that the pollution damage resulted from his personal act or omission, committed with the intent to cause such damage, or recklessly and with knowledge that such damage would probably result" (article V (2) of CLC of 1992 and article 4 (4) of the Fund Convention). In the case of the Fund Convention, the Fund under article 4 (2) (a) and (b) and article 4 (3) will have no obligation to pay compensation for reasons similar to those referred to in article III (2) and article III (3) of the CLC. In addition, the Fund will also not pay according to article 4 (2) (a) and (b) if the source of oil pollution was a warship or other ship owned or operated by and used, at the time of the incident, only on government, non-commercial service; or the claimant cannot prove that the damage resulted from an incident involving one or more ships. The Fund under article 4 (3) is in any event exempt from payment of compensation to the extent that the owner is exempt. However, there is no exoneration of the Fund from paying compensation in respect of preventive (response) measures undertaken.

[82] Article V (1) of the 1992 Protocol and article 4 of the Fund Convention. Following the sinking of the *Erika* off the French coast in 1990, the maximum limit was raised to 89.77 million SDRs effective 1 November 2003. Under 2000 amendments to the 1992 Fund Protocol to enter into force in November 2003, the amounts have been raised from 135 million to 203 million SDRs. If three States contributing to the Fund receive more than 600 million tons of oil per annum, the maximum amount is raised to 300,740,000 SDRs, from 200 million SDRs.

[83] Pollution damage is defined as "loss or damage caused outside the ship carrying oil by contamination resulting from the escape of oil from the ship, wherever such escape or damage may occur". However, "pollution" and "contamination" are not defined. It is understood

Preventive measures are defined as reasonable measures of response undertaken by any person *after* the damage occurred to prevent or minimize the damage.

51. As the definition of pollution damage in the CLC was too general and indeed vague on its scope, the parties to the CLC and the Fund Conventions made an attempt in 1984 to clarify its meaning and scope. According to that definition, "pollution damage" meant:

(a) Loss or damage caused outside the ship by contamination resulting from the escape or discharge of the oil from the ship, wherever such escape or discharge may occur, provided that compensation for impairment of the environment other than loss of profit from such impairment shall be limited to costs of reasonable measures of reinstatement actually undertaken or to be undertaken;

(b) The costs of preventive measures and further loss of or damage caused by preventive measures.

52. This definition was designed to provide compensation for direct economic loss to persons, their property and their economic circumstances through the damage to the environment. It was thus aimed to specifically exclude liability for damage to environment per se.[84] The definition could not be adopted as an amendment to the CLC and the Fund Conventions because of the non-participation of the United States of America. To overcome this difficulty the parties then attempted to conclude two new protocols in 1992 to both the CLC and the Fund Conventions incorporating the 1984 definition of "pollution damage". Before the two Protocols came into force in 1996, an attempt was made by some claimants to rely upon this definition to claim compensation for damage to the environment per se. The Fund took the view that claims for impairment of environment per se were not acceptable; the only acceptable ones were those involving quantifiable economic loss, measurable in monetary terms. In some cases, the Fund arrived at out-of-court settlements.[85]

53. To clarify matters further, a working group of the Fund Assembly was established in 1993. As a result of its work, the Group noted that the Fund should pay only for quantifiable economic loss, which was verifiable, and for measures that were objectively reasonable at the time they were taken.

54. With regard to the costs of reinstatement, the Working Group noted that, in order to qualify for payment: they should be reasonable; measures undertaken should not be disproportionate to the results achieved or the results which could reasonably be expected; and the measures should be appropriate and offer a

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generally that "contamination" referred to anthropogenic introduction of substances or energy into the sea; and "pollution" referred to their deleterious effects. For a representative definition of these terms, see, for example, the 1982 United Nations Convention on the Law of the Sea. Its article 1(4) defines "pollution of the marine environment" as "the introduction by man ... of substances or energy into the marine environment, ... which results or is likely to result in such deleterious effects ..." There is now an attempt to further modify this definition to reflect the precautionary approach. See Louise de La Fayette, *supra* note 4, p. 153 (footnote 16).

[84] Ibid, p.156.

[85] See the Italian claims in the 1985 Patomos case and the 1991 Haven case. In those cases, the Italian courts allowed the claims of the Government of Italy, in its capacity as a trustee for the national patrimony, for damage to the environment per se. For a discussion of the Patomas case, see P. Sands, *supra* note 60, pp. 663-664, and also Maria Clara Maffei, "The Compensation for Ecological Damage in the Patomos case", in Francioni and Scovazzi (eds.), *supra* note 22, pp. 381-394. On the settlement reached by the Italian Government in the Haven case, see the IOPC, annual report, 1999, at pp. 42-48.

reasonable prospect of success. In respect of a specific oil spill, it also agreed that the Fund should pay the costs of scientific studies to assess the precise extent and nature of the damage to the environment and to evaluate whether measures of reinstatement were needed. Moreover, the Working Group recommended that the compensation should be paid for measures actually undertaken or to be undertaken. The Fund Assembly endorsed these recommendations in 1994. However, to date it appears that no claims for reinstatement have been made or paid.

(a) Oil pollution damage and the special position of the United States of America under the 1990 Oil Pollution Act

55. The position thus developed by the Fund in its practice in respect of oil pollution damage is different from the national position of the United States. The position of the United States changed with the 1989 *Exxon Valdez* oil spill disaster that caused massive damage to the environmentally sensitive coast of Alaska.[86] The cost of the oil removal and restoration far exceeded admissible amounts under the Fund Convention. Further, as the definition of "pollution damage" which the Fund attempted to put together in 1984 did not cover damage to environment per se, the United States did not join the revised CLC and the Fund Conventions and decided to adopt its own more stringent Oil Pollution Act, 1990.

56. There are some important differences between the OPA, 1990, of the United States and the international regime.[87] First, liability is channelled to "any person owning, operating, or demise chartering the vessel" as opposed to the shipowner; and liability applies in respect of any oil spill as opposed to only persistent oil. The liability is strict, joint and several. More limited defences were provided under the OPA than under the international regime. Thus, there are only three defences: act of God, act of war, or act or omission of a third party. "Third party" is narrowly defined. Acts or omissions of a third party which has a contractual relationship with the responsible party could not be offered as a defence under the OPA unless the responsible party was able to show that it had exercised due care and taken precautions against foreseeable acts or omissions. Further, even those limited defences would not be available if the responsible party had failed or had refused to report the incident or to provide reasonable assistance and cooperation in connection with removal activities necessitated by the incident or to comply with certain orders. Equally, the defence of government negligence to maintain aids to navigation like lights would not be available under the OPA, while it is a defence under the international regime.

57. In addition, the operator's liability is limited. Parties responsible may offset their own clean-up costs against the liability limits. If the limit is exceeded, liability is allocated to the lessee or permittee of the area in which the activity is located, again up to a limit. The limitation could be breached in the case of the OPA, as in

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[86] After the *Erika* oil spill disaster off the western coast of France in December 1999, at a working group convened at the request of France to consider possible amendments to the CLC/Fund regime, it was suggested that a revision of the definition of oil pollution damage was desirable. No progress, however, has been reported so far. See Louise de La Fayette, *supra* note 4, p. 159.

[87] For an analysis of United States laws, see Thomas J. Schoenbaum, "Environmental Damages: The Emerging Law in the United States", in Peter Wetterstein, *supra* note 5, pp. 159-173; A. H. E. Popp, "A North American perspective on liability and compensation for oil pollution caused by ships" in Colin M. De La Rue (ed.), *supra* note 80, pp. 109-131, pp. 117-124. For an analysis of the Oil Pollution Act, 1990 and the Oil Spill Liability Trust Fund, see Christopher Kende, "The United States Approach", in Colin M. De La Rue, op.cit., pp. 131-149.

the case of the international regime, if "gross negligence and wilful misconduct of responsible party" is a cause of the incident. However, unlike the international regime, the limitation could also be breached if the incident is proximately caused by "the violation of an applicable Federal safety, construction, or operating regulation" by the responsible party; or if the responsible party fails or refuses to report the incident or to provide reasonable cooperation or assistance in connection with the removal of activities or to comply with various orders. Moreover, if the limit is not breached under the OPA, it does not prevent individual states of the United States to impose additional liability requirements under their state law. The international regime is governed in this regard only by the "fault and privity" test.

58. In addition to providing a higher level of compensation,[88] the OPA provides compensation for damage to the environment per se, under the heading "natural resource damage".[89] In case of an "observable and measurable adverse change in a natural resource or impairment of a natural resource service", liability could result and compensation is payable for (a) the cost of restoring, rehabilitating, replacing, or acquiring the equivalent of, the damaged natural resource; (b) the diminution of value of those resources pending restoration; and (c) the reasonable cost of assessing those damages.[90] These costs are recoverable by designated federal agencies, state governments, or Indian tribes as trustees for the natural resources; and in the case of damage to the environment in the territory or area under the exclusive jurisdiction and control of a foreign State, the foreign trustee.[91]

59. However, the problem of how to calculate costs of damage remained in case of both the value of the loss of resource use while it is being restored, and the value of damaged resources, where they cannot be restored and the creation of an "equivalent" environment is not possible. This is a problem not only under the United States law but also under any international regime. The lack of a generally agreed method of calculation of natural resource damage or damage to environment per se is one of the reasons that compensation for these aspects of "harm" was not included in the various international regimes.

60. The only reported case on this matter is *Commonwealth of Puerto Rico v. The S.S. Zoe Colocotroni* (1980). Rejecting a measure based upon diminution of the market value of the damaged area, the Court held that the applicable measure is "the cost reasonably to be incurred by the sovereign or its designated agency to restore or rehabilitate the environment in the affected area to its pre-existing condition, or as close thereto as is feasible without grossly disproportionate expenditures". The Court rejected as grossly disproportionate a measure of damage based on the replacement of damaged trees and oil-contaminated sediments, approving instead a standard based on what it would cost to purchase the biota destroyed. Accordingly the Court's measure of damages appears to be "based upon man-aided rehabilitation

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[88] For the limits specified in the OPA, see Schoenbaum, op. cit., p. 161; Popp, op. cit., pp. 123-124. Under the OPA, an initial level of compensation is payable by the responsible party; and a second level is provided by the Trust Fund.

[89] There are six categories of recoverable damages under the OPA: natural resources, real or personal property, subsistence use, revenues, profits and earning capacity and public service. For a discussion, see Schoenbaum, op. cit., p. 163.

[90] Federal Register 504 (5 January 1996), s. 2706(d), cited in Louise de La Fayette, *supra* note 4, p. 151 (footnote 8).

[91] On the role of the government trustees, see Brighton and Askman, "The Role of the Government Trustees in Recovering Compensation for Injury to Natural Resources", in Peter Wetterstein (ed.), *supra* note 5, pp. 177-206.

of the affected area within a finite period of time, considering the restorative powers of the natural environment as well as economic factors".[92]

(b) 1980 Comprehensive Environmental Response, Compensation and Liability Act

61. The Comprehensive Environmental Response, Compensation and Liability Act, 1980 (CERCLA or Superfund) was passed by the United States Congress in response to severe environmental and health problems posed by the past disposal of hazardous substances. It created a comprehensive scheme for remedying the release or threatened release of a "hazardous substance" anywhere in the environment — land, air or water. The statute established the Superfund with tax dollars to be replenished by the costs recovered from the liable parties, to pay for clean-ups if necessary. The United States Environmental Protection Agency operates the Superfund and has the broad powers to investigate contamination, select appropriate remedial actions and either order liable parties to perform the clean-up or do the work itself and recover its costs. The courts have generally held that the liability under CERCLA is strict. CERCLA provides for a limited number of defences and exceptions. It also directs that the damage assessment regulations address "both direct and indirect injury, destruction, or loss and ... take into consideration factors including, but not limited to, replacement value, use value, and the liability of [the] ecosystem to recover".[93]

2. International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea, 1996 and International Convention on Civil Liability for Bunker Oil Pollution Damage, 2001

62. The International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea, 1996 (HNS), also concluded under the auspices of IMO, follows the same pattern of allocation of loss as the CLC and the Fund Conventions. The liability of the owner is defined but limited and the loss is shared with a supplementary HNS fund. Contributions to the fund come from receivers of the HNS cargo or from the Governments on their behalf.[94]

63. However, neither the CLC nor the HNS deals with damage caused by fuel oil pollution. It is difficult to treat this type of pollution, which could have a serious impact on some countries. In response to the demands of such countries, IMO developed the International Convention on Civil Liability for Bunker Oil Pollution Damage, 2001 (Bunkers Convention).[95]

64. The text follows the model of the CLC and adopts the same definition of pollution damage, confining it, however, to damage caused by oil used to propel the ship and to operate equipment. The Convention thus covers only damage by ship oil contamination and not fire or explosion. The liability is that of the shipowner and could be limited as prescribed by any insurance or other financial securities under any applicable national or international regime, such as the Convention on Limitation of Liability for Maritime Claims, 1976, as amended. No supplementary funding is envisaged.

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[92] Schoenbaum, *supra* note 87, p. 164.

[93] See for an analysis of CERCLA, see Brighton and Askman, op. cit., p. 183-184.

[94] For the text, see IMO document LEG/CONF.10/8/2. See also *35 ILM* (1996) 1415.

[95] For the text, see IMO document LEG/CONF.12/DC/1.

65. Together the three Conventions, the CLC, the HNS and the Bunkers Convention, constitute an integrated regime of liability for ship-source marine pollution.

3. Convention on Civil Liability for Oil Pollution Damage resulting from Exploration for and Exploitation of Seabed Mineral Resources, 1977

66. Following the explosion of the wildcat well off the coast of California in 1972, the international community became sensitive to the danger of pollution from the ever increasing exploitation of offshore oil reserves. Focusing such activities in the North Sea, at the initiative of the Government of the United Kingdom of Great Britain and Northern Ireland, the coastal States of the North Sea met at London in order to negotiate a convention on liability for damage resulting from the search for and exploitation of mineral resources from the seabed. The result was the adoption of the 1977 Convention on Civil Liability for Oil Pollution Damage resulting from Exploration for and Exploitation of Seabed Mineral Resources.[96]

67. The Convention provides for objective or strict liability for the operator of the installation, subject to such exceptions as are provided under the Convention (article 3). However, the operator is entitled to limit his liability to 30 million SDRs for the first five years after the opening of the Convention for signature and thereafter to 40 million SDRs (article 6). To avail itself of the limitation of liability under the Convention, the operator should have and maintain insurance or other financial security to such amount (article 8). This cover at the discretion of the State concerned need not provide for liability for pollution damage wholly caused by an act of sabotage or terrorism. Action in respect of damage claimed could be brought either in the courts of the country in which the harm suffered or in the courts of the country which exercises exclusive sovereign rights over the maritime area in which the installation is situated (article 11). The Convention so far has not attracted any ratifications, since at about the same time as it was under negotiation, the oil companies negotiated in parallel among themselves a liability agreement, the Offshore Pollution Liability (OPOL) Agreement.[97] Under OPOL, in the event of an incident, the operator is liable for the entirety of the damage caused. If it is insolvent, OPOL assumes the liability up to the amount of US$ 100 million, sharing the amount to be paid among the different partners.

4. Regulations on Prospecting and Exploration of Polymetallic Nodules, 2000

68. It may be recalled that Parts XI and XII as well as annex III to the 1982 United Nations Convention on the Law of the Sea deal with protection of the environment and on liability and responsibility for marine pollution.[98] On 13 July 2000, the Assembly of the International Seabed Authority, established under the Convention, approved the Regulations on Prospecting and Exploration for Polymetallic Nodules in the Area.[99] Some notable features of the regulations are that prospecting for

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[96] For the text, see *16 ILM* (1977)1450.

[97] For the text of the Offshore Pollution Liability Agreement, see *13 ILM* (1974)1409.

[98] See UNCLOS articles 139, 145, 209, 215, 235 and article 22 of annex III.

[99] The Regulations are contained in Seabed Authority document ISBA/6/A/18, annex. Under the Convention, "Area" means the seabed and ocean floor and subsoil thereof, beyond the national jurisdiction (Article 1 (1)(1)). For the text of the Convention, see *The Law of the Sea: Official Texts of the United Nations Convention on the Law of the Sea of 10 December 1982 and of the Agreement relating to the Implementation of Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982 with Index and Excerpts from the Final Act of the Third*

polymetallic nodules cannot be undertaken if substantial evidence indicates risk of serious harm to the marine environment; and once prospecting has commenced, the Secretary General should be notified of any incident causing serious harm to the marine environment. In addition, the operator of an exploration activity in the Area must undertake baseline studies, conduct environmental impact assessment and put in place response measures to deal with any incidents likely to cause serious harm to the marine environment. Furthermore, the operator is required to notify the Authority of any incident of serious harm and the Authority has the power to take any emergency measures at the cost of the contractor, if it does not take these measures itself. The contractor is also responsible and liable for the "actual amount of any damage, including damage to the environment, arising out of its wrongful acts or omissions". It is also responsible and liable for the wrongful acts or omissions of all of its employees, subcontractors or agents or all other persons engaged in the activity on its behalf. This liability includes the costs of reasonable measures to prevent or limit damage to the marine environment, account being taken of any acts or omissions by the Authority.

69. It may be noted[100] that the regulations refer to the different concepts of "serious harm" and "damage" to the marine environment. It is not made clear whether they have the same meaning. While "serious harm" is defined as "significant adverse change in the marine environment", "damage" is left undefined. Moreover, the definition of "serious harm" is incomplete, as it is dependent upon a determination to be made "according to rules, regulations and procedures adopted by the Authority on the basis of internationally recognized standards and practices". Further work is therefore required of the Authority. Left out of the liability of the operator is the obligation to meet the costs of restoration or reinstatement of the marine environment to the extent that is possible at all. This gap is a bit unexplainable, particularly since the liability of the operator is fault-based. It is also clear that reference to the obligation of the operator to pay only actual costs is to confine that obligation only to quantifiable damages and not to extend it to speculative or theoretical calculations (following the example of the IOPC Fund).

5. Basel Protocol on Liability and Compensation for Damage resulting from Transboundary Movements of Hazardous Wastes and their Disposal, 1999

70. Covering the field of international transport of hazardous substances there is the recent and, of course, slightly more complex arrangement of allocation of loss and liability found in the 1999 Basel Protocol on Liability and Compensation for Damage resulting from Transboundary Movements of Hazardous Wastes and their Disposal.[101] The Protocol applies to damage resulting from the transboundary movement and disposal of waste. It follows the pattern of strict but limited liability. However, the liability is not channelled to the shipper or to the importer as in the case of the CLC and the Fund Conventions. Instead, generators, exporters, importers and disposers are all potentially liable at different stages of the journey of the hazardous waste. While the waste is in transit, the liability would lie with the person who notifies the States concerned of the proposed movement of the waste. In such event, that will generally be either the generator or the exporter of the waste. Later,

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United Nations Conference on the Law of the Sea (United Nations publication, Sales No. E.97.V.10).

[100] For an analysis and comments on the Regulations adopted by the International Seabed Authority, see Louise de La Fayette, *supra* note 4, pp. 173-177.

[101] For the text, see UNEP/CHW.5/29.

once the waste is received on the other side, the disposer of the waste is liable for any damage. Further, in case the waste is declared as hazardous only by the State of import and not export, the importer is also liable until possession is taken by the disposer.

71. Article 4 of the Protocol also covers situations when no notification is given by the notifier, and makes the exporter liable until the waste is taken into possession by the disposer. Similarly, in the case of re-import, the person who notified will be liable for damage from the time the hazardous wastes leave the disposal site until the wastes are taken into possession by the exporter, if applicable, or by the alternate disposer. By not channelling the liability to the person operationally in charge of the wastes at any given point, the Protocol appeared to have deviated from an application of the polluter-pays principle.[102]

72. Article 4 (5) provides for exemptions of liability. These are again similar to those in the CLC. One additional exemption is in the case of damage being wholly the result of compliance with a compulsory measure of a public authority of the State where the damage occurred. Article 4 (6) provides for the right of the claimant to seek full compensation from any or all of the persons if more than one person is involved in causing the damage.

73. Article 7 is also noteworthy in that, unlike in the case of the CLC, in respect of damage where it is not possible to distinguish between the contribution made by the wastes covered by the Protocol and wastes not covered by the Protocol, all damage will be considered to be covered by the Protocol. However, if a distinction can be made, the liability under the Protocol will be proportional to the contribution made by the wastes covered by the Protocol.

74. Damage for the purpose of the Protocol is defined in article 2 (c) as:

(a) Loss of life or personal injury;

(b) Loss of or damage to property other than the property held by the person liable in accordance with the Protocol;

(c) Loss of income directly deriving from an economic interest in any use of the environment, incurred as a result of impairment of the environment, taking into account savings and costs;

(d) The costs of measures of reinstatement of the impaired environment, limited to the costs of measures actually taken or to be undertaken; and

(e) The costs of preventive measures, including any loss or damage caused by such measures, to the extent that the damage arises out of or results from hazardous properties of the wastes involved in the transboundary movement and disposal of hazardous wastes and other wastes subject to the Convention.

75. Further, "measures of reinstatement" are defined as "any reasonable measures aiming to assess, reinstate or restore damaged or destroyed components of the environment." It is left to the domestic law to determine the party entitled to take such measures (article 2, para. 2 (d)).

[102] See Christophe Bernasconi, Civil Liability Resulting From Transfrontier Environmental Damage: A case for the Hague Conference? Hague Conference of Private International Law, Preliminary Document No. 8, April 2000, for the attention of the Special Commission of May 2000 on general affairs and policy of the Conference; p. 11.

76. "Preventive measures" on the other hand are "any reasonable measures taken by any person in response to an incident, to prevent, minimize, or mitigate loss or damage, or to effect environmental clean-up" (article 2, para. 2 (e)).[103]

77. The right to prescribe financial limits for liability is left to the Contracting Parties under their domestic law, but the Protocol sets out the minimum levels of liability in annex B.

78. Article 15 of the Protocol, as read with decision V/32 on the use of Basel Convention Technical Cooperation Trust fund, on an interim basis, provides for a supplementary compensation scheme when compensation under the Protocol does not cover the costs of damage, consisting of a fund established by the Conference of the Parties to the Basel Convention. It is available only to developing States or States with economies in transition.[104]

79. Article 13 provides for time limits for entertainment of claims of compensation. Article17 prescribes the proper forum for adjudicating the claims of compensation, that is, the courts of a Contracting Party only where either (a) the damage was suffered; or (b) the incident occurred; or (c) the defendant has his habitual residence, or has his principal place of business. Each Contracting Party must ensure that its courts under their law have the necessary jurisdiction to entertain such claims of compensation. Article 18 deals with the avoidance of simultaneous court action in different jurisdictions involving the same subject matter and the same parties and the consolidation of related claims before one court under one jurisdiction to avoid the risk of irreconcilable judgements from separate proceedings. There is also a provision in article 21, subject to certain exceptions including public policy, for mutual recognition and enforcement of judgements of a court of competent jurisdiction in other jurisdictions, subject to compliance with the local formalities but without reopening the merits of the case.

80. The other main features of the Protocol are:

(a) Additional fault-based liability is placed on any person whose failure to comply with laws implementing the Basel Convention or whose wrongful, intentional, reckless or negligent acts or omissions caused the damage;

(b) There is a right of recourse against any other person liable under the Protocol, or under a contract, or under the law of the competent court;

(c) Insurance and other guarantees are compulsory;

(d) The provisions of the Protocol do not affect rights and obligations and claims under general international law with respect to State responsibility;

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[103] The reference to costs of assessment of the damage in the definition of "reinstatement" and the expression "to effect environmental clean-up" are new compared to other previous treaties on liability. This is regarded as a progressive step in the evolution of the law. However, the lack of reference to the duty to introduce equivalent components where the original fauna and flora cannot be reinstated is regarded as a backward step. Nevertheless, in comparison with the CLC regime, it is felt that there is a shift towards a greater focus on damage to the environment per se, rather than primarily on damage to persons and to property. See Louise de La Fayette, *supra* note 4, pp. 166 and 167.

[104] Ibid., p. 167.

(e) Pursuant to article 3, the Protocol applies to damage due to an incident occurring during a transboundary movement of hazardous wastes and other wastes and their disposal, including illegal traffic, from the point where the wastes are loaded on the means of transport in an area under the national jurisdiction of State of export (article 3);

(f) Under the same article 3, the application of the Protocol is excluded in several cases, for example, depending upon whether a State of export or import alone is a party or when both of them are not parties or when the provisions of another bilateral or regional or multilateral agreement which is in force apply to liability and compensation for damage caused by an incident arising during the same portion of a transboundary movement.

6. Nuclear damage and liability

81. Nuclear liability is covered by several conventions. Mention may be made of the Paris Convention on Third Party Liability in the Field of Nuclear Energy, 1960 (as amended in 1964 and 1982),[105] concluded under the auspices of the European Nuclear Energy Agency and the Organisation for Economic Cooperation and Development. The Brussels Supplementary Agreement, 1963,[106] the Vienna Convention on Civil Liability for Nuclear Damage, 1963 (as revised by a Protocol, 1997),[107] and the Vienna Convention on Supplementary Compensation for Nuclear Damage, 1997[108] may also be noted. These Conventions basically establish the operator's liability as a first tier, which is fixed and limited. Supplementary compensation through funds to be established by the State in which the installation is situated is provided as the second tier. In addition to these two tiers, a third tier of compensation is also provided whereby all the Contracting Parties pool the costs of more major accidents on an equitable basis. Article V (2) of the 1963 Vienna Convention, as revised by the Protocol of 1997, sets 5 million SDRs as the lowest level of possible liability. A State could fix under its law a similar lowest possible limit under article 7 (b) of the Paris Convention (as amended in 1982).

82. However, under the Paris Convention, any compensation payable for damage caused to the means of transportation on which the nuclear installations were located at the time of the incident (article 7 (c)) or payments towards any interest or costs awarded by a court in actions for compensation (article 7 (g)) would not affect the minimum payable compensation by the liable operator. The minimum limit of liability is also not affected in such cases under the revised Vienna Convention (articles IV (6) and VA (1)). Further, under article 1A (1) of the revised Vienna Convention, like the Paris Convention (article 7 (d)), the liability of this operator liability would apply to nuclear damage wherever suffered.[109] This is an improvement in the case of the Vienna Convention over its earlier position.

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[105] For the texts, see United Nations, *Treaty Series*, vol. 956, p. 251; *UKTS* (1968) 69; *UKTS* (1989) 6.

[106] For the text, see *2 ILM* (1963) 685.

[107] For the texts, see *2 ILM* (1963) 727, *36 ILM* (1997) 1462.

[108] For the text, see *36 ILM* (1997) 1473.

[109] However, an installation State can exclude the application of the Convention to damage suffered in the territory of a non-Contracting State if that State has a nuclear installation in its territory or in any maritime zone established in accordance with international law of the sea and does not afford equivalent and reciprocal benefits. This exclusion does not affect the rights, under article (2) (a), of persons seeking compensation in a situation where part of the damage occurred in one

83. While the installation State is given the liberty to set a lower limit of liability, under the revised Vienna Convention it is under an obligation to make good the difference by ensuring the availability of the public funds up to the amount established in article V (1). Thereunder, "the liability of the operator may be limited by the installation State for any one nuclear incident either:

> "(a) To not less than 300 million SDRs; or
>
> "(b) To not less than 150 million SDRs provided that in excess of that amount and up to at least 300 million SDRs public funds shall be made available by that State to compensate nuclear damage; or
>
> "(c) For a maximum of 15 years from the date of entry into force of this Protocol, to a transitional amount of not less than 100 million SDRs in respect of a nuclear incident occurring within that period. An amount lower than 100 million SDRs may be established, provided that public funds shall be made available by that State to compensate nuclear damage between that lesser amount and 100 million SDRs".

84. These limits of liability of the operators are far higher than the limits set earlier under the Vienna Convention ($5 million) and under the Paris Convention (only 15 million SDRs, article 7 (b)).

85. Over and above the sums of 300 million SDRs or for a transition period of 10 years, a transitional amount of 150 million SDRs is to be assured by the installation State. The Vienna Supplementary Convention of 1997 provides under article III for an additional sum of compensation to be made available from the public funds of all the other Contracting Parties in accordance with a formula specified by article IV of the Convention. This could exceed $1 billion. There is one limitation on eligibility to qualify for the additional compensation: It is only open to States that are parties to the 1994 Convention on Nuclear Safety.[110]

86. The revised Vienna Convention makes the operator's liability absolute. Exemption from liability, however, is given if the damage is attributable to an armed conflict, hostilities, civil war or insurrection. In case the operator can prove that the resulting damage is wholly or partly attributable to gross negligence of the person suffering the damage or to an act or omission of such a person done with the intent to cause damage, the competent court may, if its law so provides, relieve the operator wholly or partly from his obligation to pay compensation in respect of the damage suffered.

87. In addition, there are time limits within which claims for compensation may be submitted (article VI). The operator is required to maintain insurance and other financial security (article VII). A right of recourse for the operator is accorded (article X). Article XI deals with the jurisdiction of the court to entertain

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of the Contracting States and the jurisdiction to deal with the claims of compensation rests with the courts of that State. Similarly, this does not affect the right of persons to seek compensation for damage on board or to a ship or an aircraft within the maritime zones of a non-Contracting State.

[110] For the text, see *33 ILM* (1994) 1518. In order to make the benefits of the 1997 Supplementary Convention widely available to States, participation is not confined to the Vienna Convention, but is also open to States parties to the Paris Convention, and to any State not party to either Convention if its law conforms to the same basic principles of liability for nuclear accidents. See articles XVIII and XIX. The requirements which must be met by non-parties to the Paris and Vienna Conventions are set out in an annex.

compensation claims. This is generally the court of the Contracting Party within whose territory the nuclear incident occurred. In case of any difficulty in determining the place of occurrence of the nuclear incident, jurisdiction for the incident will lie with the courts of installation State of the liable operator. Where the incident occurred partly outside the territory of any Contracting Party and partly within the territory of a single Contracting Party, the jurisdiction will lie with the courts of the single Contracting Party. Where the jurisdiction would lie with the courts of more than one Contracting Party, the case should be settled by mutual agreement between the parties. In any case it must be ensured that the courts of only one of the Contracting States have jurisdiction to deal with compensation claims for any one nuclear incident.

88. Nuclear damage is defined on the same lines as the Basel Protocol. Compensation for damage to environment per se is not included. However, all the heads of damage are clearly set out. These include damage to persons or property and five other heads of damage, subject to the determination as admissible by the law of the competent court. They are: economic loss arising from the loss of life or any personal injury or loss of or damage to property; the costs of measures of reinstatement of impaired environment; loss of income derived from an economic interest in any use or enjoyment of the environment incurred as a result of a significant impairment of environment; the costs of preventive measures and further loss of damage caused by such measures; and any other economic loss, if permitted by the general law on civil liability of the competent court.

89. The revised Vienna Convention also defines "measures of reinstatement", "preventive measures" and "reasonable measures". Measures of reinstatement are reasonable measures approved by competent authorities of the State in which the measures were taken. They are aimed at reinstatement, the restoration of damaged or destroyed components of the environment or introduction, where reasonable, of the equivalent of those components into the environment authorized. Furthermore, only persons entitled under the law of the State in which the damage is suffered may take these measures. Qualifications requiring the approval of the concerned competent authorities of the State and law of the State are introduced to ward off overreactions and unnecessary precautions and are aimed at preventing excessive claims.

90. Preventive measures are any reasonable measures taken by any person after the nuclear incident to prevent or minimize damage. These measures may be taken only after the approval of the competent authorities of the State, if required by its law.

91. Reasonable measures are those measures found under the law of the competent court to be appropriate and proportionate, having regard to all the circumstances, for example, whether they are proportional to the magnitude and nature of the damage or risk of damage involved or whether they are likely to be effective or whether they are consistent with relevant scientific and technical expertise.

7. Lugano Convention on dangerous activities, 1993

92. The Council of Europe's 1993 Convention on Civil Liability for Damage resulting from Activities Dangerous to the Environment, known as the Lugano Convention,[111] does not cover damage caused by nuclear substances or the transport

[111] For the text, see *32 ILM* (1993) 128. The Convention has not yet entered into force. See *supra* note 4.

of dangerous goods or substances.[112] Its scope extends only to stationary activities, including the disposal of hazardous waste. It defines "dangerous activity" as one involving the production, culture, handling, storage, use, discharge, destruction, disposal, release of substances or preparation or operation of installations or sites for deposit or recycling or disposal of wastes posing significant risk for "man, the environment and property" including substances listed in an annex and genetically modified organisms.[113]

93. It imposes a strict liability for dangerous activities or substances on the operator of the activity in question. However, liability is not limited in amount and thus reflects the polluter-pays principle in a rather strict manner. Damage is widely defined and covers the impairment of the environment, as well as injury to persons and property. For this purpose, the environment is broadly defined and includes natural resources, cultural heritage property and "characteristic aspects of the landscape". However, apart from loss of profit, recovery of compensation for impairment is limited to the costs of reasonable measures[114] of prevention and reinstatement actually undertaken and to be undertaken.

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[112] The Convention on Civil Liability for Damage Caused during Carriage of Dangerous Goods by Road, Rail and Inland Navigation Vessels, 1989 (CRTD), concluded under the auspices of the United Nations Economic Commission for Europe, covers this aspect. It sets out objective liability in article 5 and contains very limited exoneration. The liability is channelled towards the transporter and its limits are set out in article 9. The Convention applies the main principles of the CLC regime to damage and deliberately replicates the1984 definition of pollution damage. Thus, it focuses on damage to persons and property through damage to environment and provides compensation for the cost of preventive measures and reasonable measures of reinstatement, which is undefined. There is joint and several liability in case damage is caused in the course of the operations of the loading and unloading of the goods. The transporter is also under an obligation to cover his liability by insurance or by any other form of financial guarantee (article 13). Although no supplementary funding is contemplated under the Convention, a Contracting State may avail itself of a reservation for the purpose of applying higher limits of liability or no limit on liability for damage arising from accidents taking place on its territory. There is one limitation under the Convention: It is applicable only if the damage caused by an event in the territory of one of the States parties and if its victims are also within the territory of that State. In other words, transboundary harm attributable to the event is not covered. For this reason the Convention has not found much favour so far with many of the States and has received no ratifications and remains without entry into force. Germany and Morocco are the only signatories to date. For the text, see ECE/TRANS/79 (1989).

[113] A genetically modified organism is defined as "any organism in which the genetic material has been altered in a way which does not occur naturally by mating and/or natural recombination". However, this does not include genetically modified organisms obtained by mutagenesis, on condition that the genetic modification does not involve the use of genetically modified organisms as recipient organisms, and plants obtained by cell fusion (including protoplast fusion) on a similar condition; see article 2 (3).

[114] The limitation of recovery of costs to reasonable measures of prevention and reinstatement is also found in the 1997 Convention on Supplementary Compensation for Nuclear Damage. However, the difference is that under that Convention, it is for the State in whose territory the measures are to taken to decide what those measures are. Under the formula noted here as well as in some other conventions, it may be for the courts to ultimately decide what constitutes reasonable measures. One guidance is that " abstract calculations of damage or claims concerning unquantifiable elements of damage to the environment will be inadmissible." See Edward Brans, "Liability and Compensation for Natural Resource Damage under the International Oil Pollution Conventions", *5 RECIEL* (1996) 297, at p. 301. A more authoritative guidance on this issue has come from the Panel of Commissioners of the United Nations Compensation Commission regarding compensation claims by Governments for monitoring and

94. Reinstatement includes the introduction "where reasonable" of the equivalent of destroyed or damaged elements of the environment, for example, where exact restoration is impossible.

95. Possible defences to liability include war, hostilities, exceptional and irresistible natural phenomena, an act of a third party, compliance with a specific order or compulsory measure of a public authority or damage caused by pollution at "tolerable levels under local relevant circumstances or dangerous activity ... taken in the lawful interest of the person who suffered the damage".[115] Limitations of time for submission of claims include three years from the time the claimant knew or ought to have known of the damage, which however should not be later than 30 years from the date of the accident. Compulsory insurance or other financial security assures the liability of the operator. Jurisdiction is based on the provisions of the 1968 Brussels Convention on Jurisdiction and Enforcement of Judgements in Civil and Commercial Matters.[116]

8. Liability and compensation: the European Community model

96. The Commission of the European Communities has been studying the question of liability and compensation for environmental damage with a view to submitting a proposal to the European Parliament and the Council of the European Union (EU). The aim is to facilitate the adoption of EU legislation on strict environmental liability by 2003.[117] After extensive consultations and debate in relevant quarters, the Commission finalized a proposal for a directive on environmental liability.[118] The draft directive does not include within its scope personal damage and damage to goods covered by traditional damage.[119] It also exempts from its scope liability and

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assessment activities undertaken to identify and evaluate environmental and natural resource damage suffered as a result of Iraq's invasion and occupation of Kuwait. The panel found that conclusive proof of environmental damage was not a prerequisite for monitoring and assessment activity to be compensable. While such activities which are "purely theoretical or speculative", or which only have tenuous connection with the damage resulting from the invasion and occupation would not be compensable, the panel considered the reasonableness of the monitoring and assessment activities on a case-by-case basis. Furthermore, a recommendation of a monitoring and assessment study does not in any way prejudge the merits of a substantive claim based on such a study. See Mojtaba Kazazi, "Environmental Damage in the Practice of the UN Compensation Commission", in Bowman and Boyle, *supra* note 4, pp. 111-131, at p. 128-129.

[115] Article 8.

[116] *8 ILM* (1969) 229.

[117] It is noted that action at the European Community level is needed to effectively and efficiently address site contamination and loss of biodiversity because: (a) there are some 300,000 sites which are definitely or potentially contaminated; (b) partial clean-up costs are estimated at between €55 and €106 billion; (c) not all member States have enacted national legislation, and most national legislation has not mandated national authorities to ensure clean-up of orphan sites; and (d) without a harmonized framework at the Community level economic actors could exploit differences in member States' approaches to engaging in the artificial legal constructions in the hope of avoiding liability. For the text, see *supra* note 4, at pp. 55 and 56.

[118] A list of different interests consulted can be found in ibid., annex I, pp. 24-26. For a summary of their views, see pp. 26-31.

[119] See article 3 (8). An earlier White Paper recommended otherwise. The following reasons were cited for the evolution of the view: they are out of place in a scheme which is aimed at achieving ambitious environmental objectives and implementing to a meaningful extent the polluter-pays and preventive principles; traditional damage can only be covered by civil liability; and further reflection is needed to harmonize various sectoral international initiatives

compensation regulated by other civil liability conventions noted in article 3 (3) of the draft, and the nuclear risks or environmental damage or imminent threat of such damage as may be caused by the operation of the activities covered by the treaty establishing the International Atomic Energy Agency or damage or an incident or activity in respect of which liability or compensation is regulated by civil liability agreements noted in article 3 (4). In addition, the activities the sole purpose of which is to serve national defence are also exempted from the scope (article 3 (7)). Further, any environmental damage or an imminent threat of such damage caused by pollution of a widespread, diffuse character, where it is impossible to establish a causal link between the damage and the activities of certain individual operators, is also excluded from the scope (article 3 (6)).

97. The proposal adopts the principle of strict but *not limited liability*[120] for damage arising from any of the occupational activities posing a potential or actual risk to man and the environment listed in annex I to the draft.[121] The liability is placed on the operator who has caused the damage or who is faced with the imminent threat of such damage. This is in accordance with the polluter-pays principle, which is at the root of the European Community (EC) environmental policy (article 174 (2) of the EC Treaty). The operator is also liable to compensate the (reasonable) costs of prevention and restoration, including the costs of assessment both in the case of environmental damage and in the case of an imminent threat of such damage.[122]

98. Article 16 does not impose strict financial security and guarantee requirements on the operators, but only encourages them to acquire them for the discharge of their liability. It is believed that this does not create any disadvantage, as the risks to be covered by the regime are more easily calculable and manageable. In addition it is felt that flexibility is necessary for the first years of its implementation, since a number of novelties are present in the regime for insurers and other financial providers.[123]

99. However, under article 8, in the case of biodiversity[124] damage or imminent threat of such damage from the operation of any occupational activities other than

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and evolving international civil liability instruments supplementing international environmental agreements. Ibid., pp. 16-17.

[120] An evaluation of the possibility of introducing limited liability according to the proposal should be undertaken within three years after the entry into force of the directive. See supra note 4, annex III, p. 54. The question of limited liability also figures in connection with insurability of risk associated with the damage and compensation. However, limits have advantages and disadvantages. Lowered limits would improve insurability but would reduce compliance costs and hence deterrence. The proposal, on the other hand, gives the member States the choice to set up limited financial assurance requirements at the time of its implementation. Ibid., p. 9.

[121] Occupational activities cover non-profit making activities as well as activities carried out by public enterprises or bodies. Ibid., p. 29.

[122] Article 7. The article does not refer to reasonable costs, as has been found in the case of several other conventions. But it is assumed that that limitation would be inherent in the principle. See Edward Brans, "The EC White Paper on Environmental Liability and the Recovery of Damages for Injury to Public Natural Resources", in Bowman and Boyle, *supra* note 4, pp. 323-333, at p. 328 (footnote 22).

[123] Ibid., p. 17.

[124] "Biodiversity" is defined in the proposal with reference to earlier EC directives or as habitats and species, not covered by those directives for which areas of protection or conservation have been designated pursuant to the relevant national legislation. See article 2 (2), *supra* note 4, p. 36. It is noted that the definition of "biological diversity" in article 2 of the Convention on

those listed in annex I, the operator is not liable if it is not established that he is not at fault or negligent.[125] Nevertheless, he would be responsible, under article 10, to bear any costs relating to preventive measures which he was required to take as matter of course.

100. "Damage" is defined as "measurable adverse change in a natural resource and/or measurable impairment of a natural resource service which may occur directly or indirectly".

101. "Environmental damage" means biodiversity damage, water damage and land damage. "Natural resource" for this purpose means biodiversity, water and soil, including subsoil.

102. When the preventive or restorative measures are taken by the competent authorities or by a third party on its behalf, the cost should be recovered from the operator, within a period of five years. "Preventive measures" are defined as any measures taken in response to an event, act or omission that has created an imminent threat of environmental damage, with a view to preventing or minimizing that damage. Furthermore, "restoration" means any action, or combination of actions, to restore, rehabilitate or replace damaged natural resources and/or impaired services, or to provide an equivalent alternative to those resources or services which includes primary restoration or natural recovery and compensatory restoration or restoration done in a different location from that in which the relevant natural resources and/or services have been damaged and action taken to compensate for interim losses.[126]

Biological Diversity cannot be considered suitable for this purpose and for the purpose of liability to be attached to genetically modified organisms. That Convention's definition goes beyond the idea of habitats and species and covers "variability" among living organisms. Such an approach, according to the proposal, raised delicate questions as to how such damage would be quantified and what would be the threshold of damage entailing liability. This comment was noted without prejudice to the future possibilities concerning the issue in the context of the implementation of the Convention on Biological Diversity and the Protocol on Biosafety; ibid., p. 17.

[125] The Commission's proposal to exclude traditional heads of damage and to limit the definition of biodiversity damage by reference to protected species and habitats is criticized. According to one comment it "severely limits the relevance of and applicability of proposed regime to any damage caused by [genetically modified organisms]". See Ruth Mackenzie, "Environmental Damage and Genetically Modified Organisms", in Bowman and Boyle, *supra* note 4, pp. 63, ff., at p. 75.

[126] It is suggested that when natural resource damage occurs, the restoration purpose set by the proposal is to achieve equivalent solutions rather than replicate, irrespective of the cost, the situation pre-incident. *Supra* note 4, p. 7. It is considered that restoration costs can generally be estimated more accurately and easily than the value of the injured natural resources. See *Ohio v. DOI*, cited in Edward Brans, *supra* note 122, at p. 331. See also M. J. Mazzotta et al., "Natural Resource Damage Assessment: The Role of Resource Restoration", *34 Natural Resources Journal* (1994) 167. Annex II to the proposal elaborates on reasonable restorative options and urges the competent authority to evaluate the restorative options against several criteria: (a) the effect of each of the options on public health and safety; (b) the cost to carry out the option; (c) the likelihood of success of each option; (d) the extent to which each option will prevent future damage and avoid collateral damage as a result of implementing the option; and (e) the extent to which each option benefits each component of the natural resource and/or service. If several options are likely to deliver the same value, the least costly one should be preferred. Among other things, the competent authority should also invite the comments of the persons on whose land the restorative measures are to be carried out and give them necessary consideration. *Supra* note 4, pp. 51-53. In its approach the proposal thus appears to be similar to the approach adopted in the United States of America under the natural resources damage assessment that

103. The operator is allowed under article 9 certain defences against claims of liability. These include events beyond his control, such as armed conflicts, hostilities, civil wars or insurrections; natural phenomena of exceptional, inevitable and irresistible character. Other grounds for exemption from liability include: specific emissions or events allowed in applicable law or in the permit or authorization issued to the operator; or emissions or activities which were not considered at the time of their release or activity harmful according to available scientific and technical knowledge, provided the operator is not negligent; damage intentionally caused by a third party; compliance with the rules and regulations emanating from public authorities;[127] and where the operator, acting in the capacity as an insolvency practitioner, acted in accordance with relevant national provisions and is not at fault or negligent.

104. Under article 6, member States are required to put in place financial resources to ensure that the necessary preventive or restorative measures are taken in situations, without prejudice to the liability of the operator, where such liability cannot be put to use. This could happen in such cases as when the operator cannot be identified, his funds are not adequate or are insufficient to meet any or all necessary preventive or restorative measures or he is not required under the proposed directive to bear the costs of such measures. Detailed arrangements are, however, left to the States.

105. Provision is also made for qualified entities such as the public interest groups and non-governmental organizations to be given special status to ensure the good functioning of the system, given the absence of proprietary interest with respect, for example, to biodiversity. In case of imminent threat of or of actual damage to environment, persons affected or qualified entities would be entitled to request that the competent authority take action under certain conditions and circumstances.

106. The scheme proposed is subject to periodic review on the basis of reports to be submitted by member States to the Commission indicating the experience gained, so that the Commission might assess the impact of the regime on sustainable development and whether review is appropriate.

9. Damage caused by space objects

107. The 1972 Convention on International Liability for Damage caused by Space Objects (Space Liability Convention) is the only existing Convention with State liability, as opposed to civil liability.[128] It places absolute liability on the "launching State", which is defined as: (a) a State which launches or procures the launching of a space object, and (b) a State from whose territory a space object is launched. The launching State is liable for the damage caused by its space objects on the surface of the earth or to aircraft in flight. The term damage refers to loss of life, personal injury or other impairment of health; or loss or damage to property of the States or of persons, natural or juridical, or property of international organizations.

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accompanied the 1980 Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). For an analysis of this, see Edward Brans, op. cit., pp. 332-334.

[127] However, regulatory compliance, that is, compliance with permit or authorization, is not a defence. Ibid., p. 29.

[128] For the text, see United Nations, *Treaty Series*, vol. 961, p. 187. The Convention entered into force on 1 September 1972.

108. There is only one case of damage attributable to space activity which attracted the provisions of this Convention.[129] On 24 January 1978, a Soviet satellite powered by a small nuclear reactor disintegrated over the Canadian Northwest Territories. Canada claimed compensation for damage caused by the radioactive fragments of the satellite pursuant to the Space Liability Convention, and to the general principles of international law. No specific damage occurred.

109. However, Canada spent Can$ 13,970,143.66 to locate, remove and to test the widely scattered pieces of satellite on the frozen Arctic terrain. It was the Canadian argument that the clean-up costs and the prevention of potential hazard to State territory and its inhabitants should be deemed to have been included in the concept of damage to property under the Convention. Claims under general international law were made with abundant caution. The aim of the Canadian expenditure was to assess the damage, to limit the existing damage, to minimize the risk of further damage and to restore the environment to the condition which existed before the incident. After extended negotiations, the Soviet Union agreed to pay about half the amount claimed by Canada as the cost of clean-up operations.

110. The Canadian interpretation of the Space Liability Convention, however, was endorsed by the General Assembly in the "Principles Relevant to the Use of Nuclear Power sources in Outer Space", which it adopted in its resolution 47/68 of 14 December 1992. Principle 9 deals with liability and compensation. While paragraph 1 applies the principle to damage caused by space objects with a nuclear power source on board, paragraph 3 declares that "compensation shall include reimbursement of the duly substantiated expenses for search, recovery and clean-up operations, including expenses for assistance received from third parties". This could be treated as an authoritative interpretation of the concept of "damage" under the Space Liability Convention. It is argued that this precedent should be generalized further for the concept of "damage" under that Convention to include the cost of removing space object debris and of restoring the environment which it has impacted to the condition in which it had been had the damage not occurred.[130]

10. Activities in Antarctica

111. Negotiations are also proceeding, albeit not so successfully, on the question of concluding one or more annexes relating to liability for damage arising from the activities in Antarctica covered by the Protocol to the Antarctic Treaty on Environmental Protection concluded at Madrid in 1991.[131] This Protocol suspended the earlier 1988 Convention on the Regulation of Antarctica Mineral Resources Activities[132] concluded by the States parties to the 1959 Antarctica Treaty. Article 7 of the Protocol prohibits any activity relating to the mineral resources. Article 17 further provides for the development by States parties of one or more annexes concerning liability.

112. Initially the effort to develop a liability regime proceeded in a group of legal experts and was later continued in the Meeting of the Parties. Several issues have been under consideration with some specific proposals addressing such questions as scope of application, the definition of damage (which, it was suggested should be "significant and lasting"), standard of liability, exemptions and limits, quantum of

[129] For a recent account of the incident, see Louise de La Fayette, *supra* note 4, p. 172.
[130] Ibid., p. 173.
[131] For the text, see *30 ILM* (1991) 1451.
[132] For the text, see *27 ILM* (1991) 868.

damages, duty to take measures of response and restoration, State responsibility and dispute settlement.[133] However, it was not possible to achieve agreement on these questions. There also was no enthusiasm for accepting the liability of a State when not acting as operator, except in a narrowly defined circumstances.

113. One of the controversial issues is whether the operator should be liable for damage that was identified and accepted in a comprehensive environmental assessment (referred to as CEE in the discussions). As the discussions stand at present,[134] they are focusing more on protection and preservation of the fragile Antarctica environment and on emergency response measures. Traditional damage to persons and property covered by the normal tort law of liability is not in focus. The last meeting of the Antarctica Consultative Parties, held at St. Petersburg in July 2001, discussed a more restricted annex proposed by the United States on liability for failure to take emergency response measures. The scope of the proposal does not cover damage caused by gradual or chronic pollution, or degradation. There is a general reluctance to develop a comprehensive liability convention.

B. Models of allocation of loss: some common features

114. The various models of allocation of loss we have observed generally share some common features. They confirm that State liability is an exception and has been accepted in the sole case of outer space activities. Liability in the case of damage which is not nominal or negligible but more than appreciable or demonstrable is channelled,[135] in the case of stationary operations, to the operator of the installation. Other possibilities exist. In the case of ships it is channelled to the owner, not the operator. This means that charterers — who may be the actual operators — are not liable under the CLC. Under the Basel Protocol, waste generators, exporters, importers and disposers are all potentially liable at different stages in the transit of waste. The real underlying principle is not that "operators" are always liable, but that the party with the most effective control of the risk at the time of the accident is made primarily liable.

115. The liability of the person in control of the activity is strict or absolute in the case of hazardous or dangerous activities. This is justified as a necessary recognition of the polluter-pays principle.[136] It must be added quickly that the polluter-pays

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[133] For a mention of the discussion on these issues at an earlier stage, see P. S. Rao, Second report on prevention, A/CN.4/501, paras. 61-63.

[134] For the most recent update on the liability discussions in the context of Antarctica, see Louise de La Fayette, supra note 4, pp. 177-181. On the lack of progress, the Antarctica and Southern Ocean Coalition (ASOC), a non-governmental organization, expressed serious concern. For some specific proposals and comments on the most recent draft pending for consideration at the next meeting of the Consultative Parties at Madrid in 2003, see ASOC, information paper 77, agenda item, 8, available at www.asoc.org.

[135] According to Goldie, the nuclear liability conventions initiated the new trend of channelling liability back to the operator "no matter how long the chain of causation, nor how novel the intervening factors (other than a very limited number of exculpatory ones)". See L. F. E. Goldie, "Concepts of Strict and Absolute Liability and the Ranking of Liability in terms of Relative Exposure to Risk", *XVI Netherlands Yearbook of International Law* 174-248 (1985), p. 196. On this point see also the same author, "Liability for Damage and the Progressive Development of International Law", *14 ICLQ* (1965), p. 1189, pp. 1215-1218.

[136] Goldie asserted that the "crux of responsibility in this area of strict liability lies in the requirement that ultra-hazardous activities should pay their way, to the extent that socially

principle more often than not begs the question, who is the polluter? This is answered by different schemes of allocation of loss in different ways depending upon the circumstances.[137] Thus the present internationally agreed scheme of liability and compensation for oil pollution treats both the ship's owner and the cargo owner as sharing the responsibility. In the case of nuclear accidents in Western Europe, the uninsured risks are borne first by the State in which the installation is situated and then above a certain level by a compensation fund to which the participating Governments contribute in proportion to their installed nuclear capacity and GNP. Here the basic principle is not one of making the polluter pay but of an equitable sharing of the risk, with a large element of State subsidy.

116. The example of management of risk arising from nuclear installations in East European States is even more interesting. Some West European Governments representing a large group of potential victims of any accident have funded the work needed to improve the safety standards. The riparian States of the Rhine have also adopted a similar approach to persuade the French to reduce pollution from their potassium mines.

117. Strict liability is recognized in several jurisdictions around the world in the all legal systems.[138] Hence it is open to regard it either as a general principle of

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accepted ideas of distributive justice demand compensation for the denial of personal security, property or amenities rights through the infliction of injury by the operations of an enterprise". "That is, risk-creating enterprises should not, despite philosophical, ethical and even factual problems of identifying causation, be entitled to pass the costs of their interference with socially accepted amenities on to potential victims." See, ibid., at pp. 189-190. On the difference between strict and absolute liability, the same author notes his clarification that absolute liability is a form of "stricter than strict liability". He explained that "exculpatory rules which the courts have developed to mitigate the rigour of the defendant's liability under *Rylands v. Fletcher* (1868) LR 3 HL (and those which have been evolved in jurisdictions recognizing the alternative doctrine of ultra-hazardous activities) render the adjective 'absolute' something of a misnomer; hence the phrase 'strict liability' has come to be preferred in the usages of the common law. On the other hand, in this article the term 'absolute' has been revived", Goldie explained, "to indicate that a more rigorous form of liability than that usually labelled 'strict' is now before us, especially in the international arena". Ibid., pp. 194-195. It is noted that nearly eight exceptions could apply to the absolute liability rule enunciated by *Rylands v. Fletcher.* Ibid., footnote 50, p. 196.

[137] Birnie and Boyle, supra note 72, p. 94, give examples of different ways of allocation of loss. The authors note that in such cases "what matters is *how* the responsibility is shared, and how the compensation is funded: asking who the polluter is will not answer these questions, nor will it do so in other complex transactions such as the carriage of hazardous wastes". See also P. S. Rao, First report on prevention, A/CN.4/487/Add.1, paras. 73-86, and in particular para. 84 and footnote 73 for other examples of sharing the risk and loss.

[138] Strict liability has been favoured to regulate environmental liability by Sweden, Norway, Germany, Luxembourg, Denmark and Finland. See Brian Jones, *supra* note 5, at p. 14. According to a study initiated by the European Commission in connection with its proposal for a directive on environmental liability (*supra* note 4), by 1995, 40 states of the United States of America had instituted strict liability provisions for the cost of clean-up of contaminated sites threatening human health and ecological systems. This is in addition to the 1980 federal legislation CERCLA. See "An Analysis of the Preventive Effect of Environmental Liability: Environmental Liability, Location and Emissions Substitution: Evidence from the Toxic Release Inventory", 30 October 2001, at p. 3; available at www.europa.eu.int/comm/environment/liability/preventive.htm. See also the earlier references to the study of Mahnoush H. Arsanjani, "No-fault liability from the perspective of the general principles of law", cited in Barboza's second report on international liability, *supra* note, 15, footnote 61, at p. 159; Gunther Handl, "State Liability For Accidental Transnational Environmental Damage by Private Persons",

international law or in any case as measure of progressive development of international law.[139] In the case of activities which are not dangerous but still carry the risk of causing significant harm, there perhaps is a better case for liability to be linked to fault or negligence.

118. Where the liability is based on strict liability, it is also usual to limit the liability to amounts that would be generally insurable. Otherwise, if a compensation fund did not exist, the channelling of strict liability, for example, to the oil tank owner alone, disregarding the owners of oil cargo, would not be reasonable or sustainable. Under most of the schemes which provide for limited but strict liability, the operator is obliged to obtain insurance and such other suitable financial securities to take advantage of the scheme.

119. The scheme of limited liability is open to criticism as not capable of providing sufficient incentive to the operator to take stricter measures of prevention. If the limits are set too low it could even become a licence to pollute or cause injury to others and externalize the real costs of the operator. It is also felt that it may not be able to meet all the legitimate demands and claims of innocent victims for reparation in case of injury.[140] It is argued that fault-based liability, on balance, is not unlikely to better serve the interests of the innocent victims and that it is worth retaining as an option for liability. It is not unusual that in the case of fault liability the victim is given an opportunity to have liberal recourse to rules of evidence and inference. By reversing the burden of proof, the operator may be required to prove that he has taken all the care expected of a reasonable and prudent person proportional to the risk of the operation.[141]

120. Most liability regimes concerning dangerous activities provide for additional funding sources to meet the claims of damage and in particular to meet the costs of

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74 AJIL (1980) 525-565, at p. 553 ("it should be permissible to proceed on the assumption that strict liability for abnormally dangerous activities exists as principle of present general international law").

[139] See the caution of the 1996 Working Group of the Commission earlier to regard no-fault liability as a general principle of international law, *supra* note 25. Goldie appears to share the caution of the Commission. After reviewing some justifications and theories in favour of strict liability, he stated that "insofar as these theories provide a rationale for requiring strict liability for products and operations, they have received only a very limited acceptance in the world's legal systems". Accordingly, "their reception by international law would undoubtedly reflect actions in terms of 'progressive development'", ibid., p. 210.

[140] The point was made that given the limits imposed upon liability in many recent Conventions, which is essentially for economic reasons, "it is useful to return to fundamental tort theories in which the regulations have avoided: actions based on responsibility for fault". Alexander Kiss and Dinah Shelton, *International Environmental Law* (1991), p. 375. See also Boyle, *supra* note 51, where he noted that the principle of strict liability for all its promise "may not meet these transboundary costs in full". He noted further that although less onerous than strict liability, responsibility for a failure of due diligence may in practice entail "a more extensive obligation of reparation"; p. 366.

[141] Brian Jones, *supra* note 5, at p. 22. The author noted: "If there is something about environmental damage cases which makes it particularly problematic for plaintiffs to demonstrate fault, there may well be a good argument for altering ordinary civil liability rules so as to reverse the onus of proof." He also pointed out that "ultimately the difference between fault-based liability and strict liability may not be as great as may sometimes be suggested or imagined. A regime even of strict liability may contain within its particulars a number of defences enabling a defendant to avoid liability in certain situations. Moreover, even where liability remained fault-based, experience suggests that there may be opportunities for judges to rule that the fault threshold has been satisfied on relatively little, or none too grave, evidence".

response and restoration measures that are essential to contain the damage and to restore value to affected natural resources and public amenities.

121. The additional sources of funding are created out of two different accounts. The first derives from the public funds and part of the national budget. In other words, the State takes a share in the allocation of loss created by the damage. The other share, however, is allocated to a common pool of funds created by contributions either from operators of the same type of dangerous activities or from entities for whose direct benefit the dangerous or hazardous activity is carried out. It is not often explicitly stated which pool of funds — the one created by operators or by the beneficiaries, or by the State — would, on a priority basis, provide the relief after the liability limits of the operator had been exhausted. In the case of restoration and response measures, it is even stipulated that a State or any other public agency which steps in to undertake such measures could subsequently recover the costs of such operations from the operator.

C. Some elements of civil liability

122. To understand fully the scheme of civil liability, which focuses on the liability of the operator, some of its elements may be noted.

123. The principal judicial means for obtaining reparation for damage resulting from transfrontier harm, in common law, are based on different theories. Nuisance, which refers to excessive and unreasonable hindrance to the private utilization or enjoyment of real property, provides one such basis. Trespass, which is the cause of action for direct and immediate physical intrusion into the immovable property of another person, is another. Negligence and the rule of objective liability stated in the *Rylands v. Fletcher* case have also been the basis for several claims in common law. In addition, the doctrine of public trust (State, as a trustee of natural resources) and that of riparian rights (rights of owners of property bordering a watercourse) also provide a basis for seeking remedies for such damage.[142] Similarly in a civil law system, the obligation to repair a transfrontier damage may above all flow from neighbourhood law (duty of owner of a property or installation, especially one carrying industrial activities, to abstain from any excesses which may be detrimental to the neighbour's property), from a special rule of liability for damage to the environment, or still further from the general principles governing civil liability (burden of proof; strict liability with exoneration in the case of damage due to an independent cause such as accident or force majeure).[143]

124. The various legal bases for seeking remedies noted above in turn give rise to other legal issues.

1. The problem of causation

125. The principle of causation is linked to questions of foreseeability and proximity or direct loss. It is noted that a negligence claim could be brought to recover compensation for injury to land if the plaintiff establishes that: (a) the defendant owed a duty to the plaintiff to conform to a specified standard of care;

[142] For a discussion of the various grounds under the common law, see Thomas Schoenbaum, "Environmental Damages in the Common Law: An Overview", in M. Bowman and A. Boyle, *supra* note 4, pp. 213-222.

[143] For a survey of various national positions on these aspects or bases of liability, see Christophe Bernasconi, *supra* note 102, pp. 16-26.

(b) the defendant breached that duty; (c) the defendant's breach of duty proximately caused the injury to the plaintiff; and (d) the plaintiff suffered damage. Further, certain types of environmental degradation, such as contamination by hazardous substances, may give rise to strict liability under the common law doctrine of *Rylands v. Fletcher*. In the *Cambridge Water* case,[144] the House of Lords held that the principle of foreseeability applied not only to actions in negligence and nuisance, but also to *Rylands v. Fletcher* actions. According to Schoenbaum, actions in common law could adequately cover various claims of transboundary harm involving, for example, air pollution, water pollution, soil and groundwater contamination, and wetland degradation and release of toxic substances. However, he adds, that common law is still deficient in the definition and measurement of damages.[145]

126. Courts in different countries have applied the principle and notions of proximate cause, adequate causation, foreseeability, and remoteness of the damage. This is a highly discretionary and unpredictable branch of law. Different countries have applied these concepts with different results. It may be mentioned that the test of proximity seems to have been gradually eased in modern tort law. Developments have moved from strict *conditio sine qua non* theory over the foreseeability ("adequacy") test to a less stringent causation test requiring only the "reasonable imputation" of damage. Further, the foreseeability test could become less and less important with the progress made in medicine, biology, biochemistry, statistics and other relevant fields. Given these reasons, it is suggested that it would seem difficult to include such tests in a more general analytical model on loss allocation.[146]

2. Discharge of duty of care

127. The discharge of duty of care prescribed by law would involve proof of fault or negligence or strict liability. It would also involve determinations of whether the conduct is lawful, reasonable or excessive. However, proof of fault on the part of the injured party is not required for the application of the neighbourhood law under the civil law system. All that is needed is to show that the harm resulting from the particular conduct exceeded the limits of tolerance that neighbours owe each other. The test for determining the excess involved is that of a reasonable person of average sensitivity.

128. Further, under article 684 of the Swiss Civil Code, which provides for no-fault application of the neighbourhood law, it is immaterial whether the activity which produced the excessive harm is lawful or not. An additional difficult question concerns the value and recognition to be given to a permit of authorization granted by a country to an activity within its territory which produced excessively harmful effects in the neighbouring country. The problem in such a case might revolve around the law that is deemed applicable. A choice has to be made between the law of the State of authorization and the law of the State where the injury occurred. Different answers are possible depending upon the particular policy favoured. For example, the law of the State of authorization would be favoured if primacy were given to foreign rule and the link between that rule and the situation which caused the damage and the need to enforce the decision in the country of authorization. On

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[144] *Cambridge Water Co. v. Eastern Counties Leather, PLC* [1994] 2 AC 264 (HL).

[145] Thomas Schoenbaum, *supra* note 142, pp. 214-215.

[146] See Peter Wetterstein, "A Proprietary or Possessory Interest: A *Conditio Sine Qua Non* for Claiming Damages for Environmental Impairment?" in Peter Wetterstein (ed.) *supra* note 5, pp. 29-53, at p. 40.

the other hand, the law of the injured State would be favoured if the emphasis were placed on the need to comply with some minimum substantive standards while granting authorization, and the due respect to be given to the law of the State where the injury was produced. Once again, no particular solution is widely favoured.[147]

129. Under common law, liability for nuisance is modulated by the principle of mutual accommodation between two neighbouring landowners. The conflict in uses is judged according to whether or not the interference is reasonable. There could be an overlap between actions for nuisance and negligence[148] and as between nuisance and trespass,[149] but the legal bases on which such claims are judged are different. Furthermore, while in the United Kingdom strict liability is treated as a special application of the nuisance doctrine, in the American practice, the doctrine is distinct from nuisance and is more an application of the polluter-pays principle.[150]

3. Definition of damage and compensation

130. Even if a causal link is established, there may be difficult questions regarding claims eligible for compensation, such as for economic loss, pain and suffering, permanent disability, loss of amenities or of consortium, as well as those based on an evaluation of the injury. Similarly, a damage to a property, which could be repaired or replaced, could be compensated on the basis of the value of the repair or replacement. However, it is difficult to compensate damage caused to objects of historical or cultural value, except on the basis of arbitrary evaluations made on a case-by-case basis. Further, the looser and less concrete the link with the property which has been damaged, the less certain that the right to compensation exists. A question has also arisen as to whether a pure economic loss involving a loss of the right of an individual to enjoy a public facility, but not involving a direct personal loss or injury to a proprietary interest, qualifies for compensation.[151] Pure economic losses such as the losses suffered by a hotel, for example, are payable in Sweden and in Finland but not in some other jurisdictions.[152]

(a) Damage to environment per se or natural resources

131. The analysis of various schemes of allocation of loss above has revealed that in general there is no support for accepting liability for damage to environment per se. This limitation is however partially remedied if there is damage to persons or property as a result of damage to the environment. Further, in the case of damage to natural resources or environment, there is also agreement to provide for the right of compensation or reimbursement for costs incurred by way of reasonable or, in some cases, the approved or authorized preventive or responsive measures of restoration or reinstatement. This is further limited in the case of some conventions to measures *actually* undertaken, excluding loss of profit from the impairment of

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[147] See Christophe Bernasconi, *supra* note 102, pp. 41-44.

[148] Thomas Schoenbaum, *supra* note 142, p. 214 (fn. 5).

[149] Christophe Bernasconi, *supra* note, 102, p. 17.

[150] Thomas Schoenbaum, *supra* note 142, p. 214 (fn. 6).

[151] Peter Wetterstein, *supra* note 156, p. 32.

[152] Jan M. Van Dunne, "Liability for Pure Economic Loss: Rule or Exception? A Comparatist's View of the Civil Law — Common Law Split on Compensation of Non-Physical Damage in Tort Law", *Revue européenne de droit privé* 1999, pp. 397-428, cited in Christophe Bernasconi, *supra* note 102, p. 24 (fn. 108).

environment.[153] Some countries, such as the United States, Canada, Italy, the United Kingdom, Denmark, Finland, Norway and France and to some extent Germany, have special legislation relying upon strict liability for this purpose.[154] The reasonableness criterion is also included in many international treaties. Several have also included a definition of damage and, in particular, specification of measures of reinstatement eligible for compensation. "Reasonableness" is defined in some cases as those measures which are found in the law of the competent court to be appropriate and proportionate, having regard to all the circumstances.[155]

132. The aim is not to restore or return the environment to its original state but to enable it to maintain its permanent functions. In the process it is not expected that expenditures will be incurred which are disproportionate to the results desired, and such costs should be cost-effective. Subject to these considerations, if restoration or reinstatement of environment is not possible, it is reasonable to introduce the equivalent of those components into the environment.[156]

(b) Measuring damages

133. The *Amoco Cadiz* case (1978)[157] illustrated the approach of courts with regard to measuring damages in the case of harm to the environment. France and other injured parties brought a claim to the United States District Court in respect of the oil tanker spill which had caused extensive damage to the coast of Brittany. A claim was not filed under the CLC and the Fund Convention because France was not a party to the Fund Convention at the time of the accident. Further, the amount of compensation allowable under the CLC was too low (about 77 million francs or one tenth of the amount claimed), and it was felt that it would be difficult to persuade

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[153] See the Lugano Convention and other conventions referred to above.

[154] See Peter Wetterstein, *supra* note 156, p. 48. On CERCLA of 1980 and OPA of 1990 of the United States, see above. Also for an analysis of the same as well as for a brief review of the treatment of environmental protection in the national laws of different countries emphasizing some of the differences that exist in those national approaches, see Christophe Bernasconi, *supra* note 102, pp. 20-23 and 24-25. In the case of France, the French courts have interpreted article 1384 of the Civil Code, which originally dealt with only exceptional cases of liability for damage caused by things like animals or buildings, to mean liability without fault. However, the Russian Federation provides for fault liability. On the question of computation of damages, the Russian Federation provides for fixed rates of indemnities, attributing to different natural items an abstract and arbitrary value, taking into consideration their ecological and commercial importance. Where they are not prescribed, costs for restoring the environment would be taken into consideration in order to determine the money damages.

[155] The 1997 Protocol to amend the Vienna Convention on Civil Liability for Nuclear Damage refers to such factors as: (a) the nature and extent of damage incurred or, in the case of preventive measures, the nature and extent of the risk of such damage; (b) the extent to which such measures are likely to be effective; and (c) relevant scientific and technical expertise. The United States Court of Appeals, in *Commonwealth of Puerto Rico v. The S.S. Zoe Colocotroni*, 628 F.2d 652 (1980), stated that the determination of whether costs of reinstatement were reasonable depended on factors such as technical feasibility of the restoration, the ability of the ecosystem to recover naturally and the expenditures necessary to rehabilitate the affected environment. See Wetterstein, *supra* note 5, p. 47.

[156] For an analysis of the definition of environment and the compensable elements of damage to environment, see Barboza, Eleventh report on international liability, A/CN.4/468, paras. 3-37 at para. 28. For an interesting account of the problem of damage, definition of harm, adverse effects and damage valuation, see M. A. Fitzmaurice, "International Protection of the Environment", *RdC*, 2001, vol. 293, pp. 225-233.

[157] For an account of the case, see Alexander Kiss and Dinah Shelton, *supra* note 140, pp. 355-356.

the French court to find fault and privity and hold the owner liable. Moreover, it was uncertain whether a French judgement could be enforced against a Liberian shell company with no assets in France. It was furthermore unlikely that the parent company, Standard Oil of Indiana, would freely agree to bear the liability.[158] The plaintiffs claimed $2.2 billion as compensation for: (a) clean-up operations by public employees; (b) gifts made by local communities, and the time of volunteers; (c) costs of material and equipment purchased for the clean-up; (d) costs of using public buildings; (e) coastline and harbour restoration; (f) lost enjoyment; (g) lost reputation and public image of the towns; (h) individual claims; and (i) ecological harm.

134. The Court awarded only $85.2 million. This covered costs for clean-up operations by public employees, including their travel costs; costs of material and equipment less the residual value of the purchased items, provided the acquisition was reasonable and the equipment was actually used and the residual value could be proved; costs of using the public buildings; and several individual claims including the claims of hotels, restaurants, campgrounds and other businesses applying as a general rule the loss of income for one year. Claims for lost enjoyment and a claim by the Departmental Union of Family Associations were rejected on the ground that the French law did not recognize them.

135. On the ecological harm, the Court did not award compensation for injury to biomass, the totality of life in the sea and on the bottom in the affected zone, deeming the claim to be complex, attenuated, speculative and based on a chain of assumptions. The Court also felt that the damage was to "*res nullius*", for which no one had a standing to claim compensation. It furthermore felt that compensation for damage to ecosystems was covered by compensation to fishermen and fishing associations based on the reduction in their catches and their resultant profits. On the other hand, the Court allowed expenses incurred by the French Government to reintroduce species which had suffered from the pollution and its consequences.

136. In the end, the *Amoco Cadiz* experience did not prove very beneficial to the victims. The litigation lasted 13 years and the plaintiffs had to offer burdensome proof, resulting in a substantial reduction of the claim of the State and an overwhelming reduction in the claims of the communes. In the end, the Breton communities were awarded barely one tenth of the amount claimed.

137. The *Amoco Cadiz* experience appeared to have only highlighted the importance of an institutionalized compensation mechanism.[159] A case for comparison arose with the *Tanio* incident, which also resulted in pollution of the Brittany coast and took place only two years after the *Amoco Cadiz* incident, on 7 March 1980. By that time, the Fund Convention had come into force. Nearly 100 claimants presented claims to the IOPC Fund, totalling 527 million francs. To adhere to the policy of the Fund, no claim for environmental damage was filed. The French State's claim related to expenses for pumping oil from the sunken ship, for clean-up operations and restoration and for the amounts paid by the State to private parties to compensate for their loss. The claim was for about double the amount available under the CLC and the Fund, that is F 244,000,000, of which F 22,000,000 represented the shipowners' limitation fund.

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[158] See, for an account, Emmanuel Fontaine, "The French Experience: '*Tanio*' and '*Amaco Cadiz*' Incidents Compared", in Colin M. De La Rue (ed.), *supra* note 80, pp. 101-108, at p. 103.

[159] See Emmanuel Fontaine, op. cit., p. 104, and for the details on *Tanio* incident.

138. After negotiations, in accordance with an agreement reached, the amount payable was determined at F348 million, resulting in a payment of nearly 70 per cent of that amount, within three to five years of the incident.

4. Standing to sue

139. Standing to sue is based generally on proprietary right, or a legally protected right, and in the case of harm to a public facility, it is reserved to a governmental authority.[160] A further common law cause of action is the public trust doctrine, which finds greater application in the United States. By virtue of that doctrine, the State holds title to certain natural resources in trust for the benefit of its citizens. It exists in United States law as a licence that allows the State, and even private citizens, to intervene to protect wildlife and natural resources.[161] This capability is strengthened by the Oil Pollution Act 1990 as well as other laws which currently provide for the recovery of natural resource damages: the Federal Water Pollution Control Act or Clean Water Act; and the Comprehensive Environmental Response, Compensation and Liability Act. As noted above, under these Acts, designated trustees may bring claims for natural resource damages. Under the Norwegian scheme, private organizations and societies have the right to claim restoration costs.[162] The 1998 Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters[163] gives standing to NGOs to act on behalf of public environmental interests. Article 2(5) holds that the public affected or likely to be affected by or having an interest in environmental decision-making shall be deemed to have an interest.

140. The proposal for a directive of the European Commission (see sect. III.A.8 above) also provides to certain recognized NGOs the right to sue in case of environmental damage.

5. Proper jurisdiction

141. With respect to the question of the proper jurisdiction to settle claims of compensation, it could be found either in the State of the injured or of the victim or in the courts of the State within the territory of which the activity producing harmful consequences is situated. State practice in these matters is not uniform. The doctrine of *forum non conveniens* comes into play, for example, in the United States and it is left to the courts to decide which is the best forum. There is some presumption under United States law in favour of not disturbing the choice of the plaintiff, but this is not uniformly applied.[164]

142. The principle of giving the plaintiff the choice of the forum to litigate claims concerning transboundary harm appeared to have a better reception under the 1968 Brussels Convention on Jurisdiction and the Enforcement of Judgements in Civil and Commercial Matters. In the *Handelskwekerij G. J. Bier v. Mines de Potasse d'Alsace S.A.* case (1976), the European Court of Justice held that article 5(3) of the Convention, which conferred jurisdiction in matters relating to "tort, delict or quasi-delict, in the courts for the place the harmful event occurred", should be interpreted

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[160] Peter Wetterstein, *supra* note 156, pp. 30 and 32.

[161] See Schoenbaum, *supra* note 142, p. 216, note 30.

[162] Peter Wetterstein, "Environmental Damage in the Legal Systems of the Nordic Countries and Germany", in M. Bowman and A. Boyle, *supra* note 4, pp. 223-242, at pp. 237 and 242.

[163] For the text, see *38 ILM* (1999) 517.

[164] See Alexander Kiss and Dinah Shelton, *supra* note 140, p. 365 (footnote 37).

to mean that the choice of the forum between the State in which the harm was suffered and the State in which the harmful activity was situated was left to the plaintiff. Accordingly, the Court noted that the article should be read to encompass both locations, the choice in a given case to be made in the interest of the plaintiff. In the instant case the matter was therefore returned to the Rotterdam court for a decision on the merits. That court had initially declined jurisdiction in the case, in the matter of the pollution of the Rhine by a defendant company situated in France. The company (Mimes de Potasse d'Alsace) had discharged over 10,000 tons of chloride every 24 hours into the Rhine river in France and the damage had been suffered by horticultural business in the Netherlands. The Netherlands plaintiffs wished to bring the suit in the Netherlands rather than in France.[165]

143. In *Oceanic Sun Line v. Fay*, the Australian High Court retained harassment as the standard against which to judge inconvenience to the defendant. One commentator noted that that would make it difficult for Australian residents and companies to escape local jurisdiction if they were taken to court in Australia by a foreign plaintiff. He argued that "the court's approach provided an incentive for companies based in Australia to adopt similar industrial safety and environmental standards in their overseas activities as they are required to domestically".[166] Two years after the *Oceanic Sun* decision, the Australian High Court affirmed a stricter test in *Voth v. Manildra Flour Mills*.[167] In that case, the Court argued that an Australian court would need to be "clearly inappropriate" before a stay on *forum non conveniens* grounds could be granted to a defendant. The relatively successful resolution of the *Ok Tedi* case, *Dagi and Others v. BHP,* hinged on Australia's approach to *forum non conveniens*.[168]

144. The environmental effects of the *Ok Tedi* mine and the highly publicized lawsuit brought against the mine operators redefined a whole range of issues pertaining to mineral resource extraction. Participation in the process of litigation represented a turning point for the mining industry, the State, non-traditional stakeholders, local and foreign NGOs (and academics). The *Ok Tedi* case involved environmental damage allegedly caused by OTML (Ok Tedi Mine Limited), a 60 per cent subsidiary of BHP (Broken Hill Proprietary Company), a major Australian mining corporation, in its operations in the Ok Tedi and Fly River systems of Papua New Guinea.

145. As at Bougainville where RTZ-CRA had a copper mine, *Ok Tedi* involved the disposal of mine waste into neighbouring river systems with catastrophic environmental and social consequences. In both cases, the Government of Papua New Guinea did its utmost to disenfranchise the locals. Australia had approved the Bougainville mine while Papua New Guinea was still a mandated protectorate, and after Bougainville turned to armed rebellion the mine closed in 1989, leaving a huge mess. While Bougainville had resulted in armed rebellion and the forced closure of the mine, the *Ok Tedi* case was resolved more or less peacefully through the willingness of an Australian court to hear the case. The case provides an important example of choice of law in relation to transboundary harm.

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[165] For the case, 21/76[1976] E.C.R.1735, see P. Sands, *supra* note 60, at p. 160.

[166] P. Prince "Bhopal, Bougainville and Ok Tedi: why Australia's *Forum Non Conveniens* Approach is Better", *47 ICLQ* (1998) 573, at 574.

[167] *Voth v. Manildra Flour Mills* (1990) 171 CLR 538.

[168] *Dagi and Others v. BHP*, Supreme Court of Victoria, Byrne J., 22 September 1995, unreported. An excellent summation of the case and its repercussions can be found at www.murdoch.edu.au/elaw/issues/v4n2/hunt42.html, at paras. 94 ff.

146. In the *Ok Tedi* case, as the Papua New Guinea Government had largely denied local villagers access to domestic justice, recourse was had to the Supreme Court of Victoria, Australia, where BHP was based. Test cases were initiated by four writs against BHP lodged in Melbourne, in the names of Rex Dagi, John Shackles, Baat Ambetu and Alex Maun (representing three clans numbering 73 people) and Daru Fish Supplies Pty Ltd (a commercial fishing company). Thereafter writs for the balance of 500 clans' claims were lodged in the National Court of Papua New Guinea. At all times, BHP contended that it acted legally with authorization from the Government of Papua New Guinea and by virtue of the various leases and licences issued to the defendants.

147. The Court recognized that "at common law, the Court will refuse to entertain a claim where it essentially concerns rights, whether possessory or proprietary, to or over foreign land, for these rights arise under the law of the place where the land is situated and can be extinguished only in the courts of that place". Therefore Byrne J. ruled that the claim for damages and other relief founded on trespass by the defendants could not be entertained in Victoria. However, he also ruled that the claim for negligence for damage *other* than to land could proceed. Byrne J. concluded that the basis of the plaintiffs' cause of action in negligence was the plaintiffs' loss of amenity or enjoyment of the land. He ruled that that was not based on a possessory or proprietary right to the land.

148. Following *Oceanic Sun* and *Voth*, BHP did not argue that the court should decline jurisdiction on the grounds of *forum non conveniens*. This meant that BHP could not escape the application of Australian legal standards in its mining operations. The resulting negotiated settlement applied higher Australian environmental standards to determine appropriate remedial action by BHP and other compensation: this included $A 400 million for construction of a tailings containment system and up to $150 million compensation for environmental damage.[169] There have been some subsequent issues in relation to the process and settlement, but the judgement nonetheless demonstrates that the law can be used effectively in such cases, particularly when political considerations in lesser-developed resource-rich nations make local redress difficult. The matter returned to court in 1997, however, in proceedings which echoed the sentiment of article 2 of the 1993 Convention on Civil Liability for Damage resulting from Activities Dangerous to the Environment[170] and demonstrated "an ongoing liberalization in terms of the recognition of new forms of compensable harm".[171]

149. The Australian "clearly inappropriate forum" position in *Ok Tedi* can be contrasted with the United States and (then) British "most suitable forum" approaches, which in the United States is largely based on the *Piper Aircraft* case.[172]

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[169] P. Prince, *supra* note 166, at p. 595.

[170] *32 ILM* (1993) 1228.

[171] Bowman, M., "Biodiversity, Intrinsic Value and the Definition and Valuation of Environmental Harm", in M. Bowman and A. Boyle, *supra* note 4, pp. 41-61, at p. 42. See also *Dagi v. Broken Hill Proprietary Co.* [1997] VR 428, cited in ibid., fn. 5.

[172] *Piper Aircraft Co. v. Reyno*, 454 US 235 (1981). Through reference to the Bhopal litigation (among others), Prince stated that the United States approach openly discriminates in favour of local litigants by placing unfair obstacles in the way of foreign plaintiffs wishing to sue United States companies in the United States. In contrast with a positive view of the Australian situation in *Ok Tedi*, it can be seen that foreign environmental damage cases have done much to create the perception that United States law allows its multinationals to avoid United States

III. Summation and submissions for consideration

150. A review of the civil liability system makes it clear that the legal issues involved are complex and can be resolved only in the context of the merits of a specific case. Such resolution also would depend upon the jurisdiction in which the case is taken up and the applicable law. It is possible to negotiate specific treaty arrangements to settle the legal regime applicable for the operation of an activity, but no general conclusions could be drawn with regard to the system of civil liability. Such an exercise, if at all considered desirable, would properly belong to forums concerned with the harmonization and progressive development of private international law.

151. Similarly, we have also reviewed various recent and well-established models of liability and compensation schemes. These models make one point very clear. They demonstrate that States have a duty to ensure that some arrangement exists to guarantee equitable allocation of loss. While the schemes do show common elements, they also show that each scheme is tailor-made for its own context. It does not follow that in every case that duty is best discharged by negotiating a liability convention, still less one based on any particular set of elements. The duty could equally well be discharged, if it is considered appropriate, as in European Community law, by allowing forum shopping and letting the plaintiff sue in the most favourable jurisdiction, or by negotiating an ad hoc settlement, as in the Bhopal litigation.

152. Further, given the need to give States sufficient flexibility to develop schemes of liability to suit their particular needs, the model of allocation of loss that the Commission might wish to endorse should be both general and residuary in character.

153. In developing this model, and taking into consideration some of the earlier work of the Commission on the topic, the following submissions are made for appropriate consideration:

(a) Any regime that may be recommended should be without prejudice to claims under civil liability as defined by national law and remedies available at the domestic level or under private international law. The model of allocation of loss to different actors in case of transboundary harm need not be based on any system of liability, such as strict or fault liability;

(b) We may endorse the recommendation of the 2002 Working Group of the Commission that any such regime should be without prejudice to claims under international law and in particular the law of State responsibility;

(c) The scope of the topic for the purpose of the present scheme of allocation should be the same as the one adopted for the draft articles on prevention. It is clear from the survey of the various schemes of liability and compensation that they all endorsed some threshold or other as a basis for the application of the regime. Accordingly, it is suggested that the same threshold of significant harm as defined

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legal standards when operating overseas. Prince argued that an Australian approach to Bhopal would have made it very difficult for a court to accept that a parent company should not accept some or all of the responsibility for the Bhopal disaster. Obviously, complex issues would have remained had the case stayed in the United States, such as to what extent a parent company should be held liable for a foreign subsidiary, but it is also likely that a far fairer result would have been achieved. See P. Prince, *supra* note 166.

and agreed in the context of the draft articles on prevention should be adopted. It is neither efficient nor desirable to reopen discussion on this point;

(d) The various models of liability and compensation have also confirmed that State liability is an exception and is accepted in the only case of outer space activities. Accordingly liability and obligation to compensate should be first placed at the doorstep of the person most in control of the activity at the time the accident or incident occurred. Thus, it need not be always the operator of an installation or a risk-bearing activity;

(e) The liability of the person in command and control of the hazardous activity could ensue once the harm caused could reasonably be traced to the activity in question. We must note that there are views to the effect that liability should be dependent upon strict proof of the causal connection between the harm and the activity. Given the complicated nature of the hazardous activities, both scientifically and technologically, and the transboundary character of the harm involved, it is believed that the test of reasonableness should better serve the purpose. The test of reasonableness, however, can be overridden, for example, on the ground that the harm might be the result of more than one source; or on the ground that there is intervention of other causes, beyond the control of the person in command and control, but for which the harm could not have occurred;

(f) Where the harm is caused by more than one activity and could be reasonably traced to each one of them, but cannot be separated with any degree of certainty, the liability could either be joint and several[173] or could be equitably apportioned. Or this option could be left to States to decide in accordance with their national law and practice;

(g) The limited liability should be supplemented by additional funding mechanisms. Such funds may be developed out of contribution from the principal beneficiaries of the activity or from the same class of operators or from earmarked State funds;

(h) The State, in addition to the obligation to earmark national funds, should also take responsibility to design suitable schemes specific to address problems concerning transboundary harm. Such schemes could address protection of its citizens against possible risk of transboundary harm; prevention of such harm from spilling over or spread to other States on account of activities within its territory, institution of contingency and other measures of preparedness; and putting in place necessary measures of response, once such harm occurred;

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[173] For a discussion on joint and several liability, see Bergkamp, supra note 5, pp. 298-306. This is generally imposed in situations where a joint action by defendants or action in concert is responsible for the damage. It is also imposed in cases where independent action of two or more defendants causes single indivisible injury. Another possibility is where such independent action causes "practically" indivisible injury. It is also imposed in case of a single or two independent actions causing a different proportion of injury which together amounts to one single injury. In the author's view, "joint and several liability should be imposed only in a limited number of situations. Joint and several liability rules should be used sparsely because they carry with them a number of disadvantages, including unfairness, 'over-deterrence', problems of insurability, uncertainty, and high administrative cost". The industry generally dislikes the idea and the victims equally generally favour it. Therefore some balance is required.

(i) The State should also ensure that recourse is available within its legal system, in accordance with evolving international standards,[174] for equitable and expeditious compensation and relief to victims of transboundary harm;

(j) The definition of damage eligible for compensation as we have seen above is not a well-settled matter. Damage to persons and property is generally compensable. Damage to environment or natural resources within the jurisdiction or in areas under the control of a State is now well accepted. However, compensation in such a case is limited to costs actually incurred on account of prevention or response measures as well as measures of restoration. Such measures must be reasonable or authorized by the State or provided for under its laws or regulations or adjudged as such by a court of law. Costs could be regarded as reasonable if they are proportional to the results achieved or achievable in the light of available scientific knowledge and technological means. Where actual restoration of damaged environment or natural resources is not possible, costs incurred to introduce equivalent elements could be reimbursed;

(k) Damage to environment per se, not resulting in any direct loss to proprietary or possessory interests of individuals or the State is not considered a fit case for compensation. Similarly, loss of profits and tourism on account of environmental damage are not likely to get compensated.

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[174] The need to evolve remedies for transnational harm in accordance with international standards was the subject of draft articles on remedies for transboundary damage in international watercourses, discussed at the 1996 Helsinki Meeting of the International Law Association. See K. W. Cuperus and A. E. Boyle, "Articles on Private Law Remedies for Transboundary Damage in International Watercourses", the Report of the Sixty-Seventh Conference of the International Law Association (1996), London, pp. 403-411. See also Harald Hohmann, "Articles on Cross-Media Pollution Resulting From the Use of the Waters of an International Drainage Basin", ibid., pp. 411-414. For discussion, see pp. 419-425.